

ABSTRACT

Title of Dissertation: POSTSECONDARY STRATIFICATION AND THE DEMOCRATIZATION OF EDUCATION: USING STRATIFICATION THEORIES AND NATIONAL DATA TO EXAMINE STRATIFICATION, THE COMMUNITY COLLEGE, AND THE TRANSFER MECHANISM IN POSTSECONDARY INSTITUTIONS

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Stratification in postsecondary education has been a persistent issue since education became widely available to women, minorities, and low-income students. This unequal access to education has significant consequences on where people end up in the labor market because of the strong connection between education and job attainment. Decades of policy have attempted to reduce educational stratification, with expanded community college access being a popular approach. Theoretically, expanded community college access increases the use of the transfer mechanism to reach the restrictive four-year institution and its associated degrees. In the past few decades there have been changes to the demographic make-up of the US and a variety of policy efforts aimed at the k-12 system and higher education funding, yet there is a dearth of recent research to indicate how the transfer mechanism is operating in the current educational environment. This three-paper dissertation uses sociological theory to hypothesize about the potential utility of the transfer

mechanism to reduce stratification and uses complex samples logistic regression and recent data from the Educational Longitudinal Study of 2002 to analyze the current effectiveness of the community college transfer pathway in reducing stratified patterns of enrollment and outcomes at four-year institutions. Findings from these analyses show that the transfer mechanism is at best an unreliable solution to stratification in higher education. While there is some evidence to suggest that low-income students are utilizing the transfer pathway at greater rates compared to traditional four-year enrollment, the transfer mechanism is doing little to facilitate access to four-year institutions for first-generation and minority students.

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IN POSTSECONDARY INSTITUTIONS

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Dedication

For my Grandma, Betty,
who has loved me unconditionally

Acknowledgements

My doctoral journey started as I ended one chapter of my life and began another. During this most recent era, I bought and sold a condo, purchased a house, adopted a second dog, supported my partner through two years of cancer treatment, was promoted at work, obtained my Level 3 WSET Certification, traveled extensively, navigated life in a pandemic, and completed a triathlon, among other highlights. I have laughed, cried, yelled, and everything in between. In hindsight, I discovered that life goes on, even when you feel like you are stuck in the darkest recesses of academia. I owe so much to those around me for helping make life happen while I have been on this journey. My heartfelt love, appreciation, and gratitude to:

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INTRODUCTION: EXAMINING STRATIFICATION IN HIGHER EDUCATION

[W]hat made... inequalities tolerable, perhaps, was that everyone – or so the national ideology claimed – had a chance to advance as far as his ability and ambition would take him.... [T]he junior college was located at the very point where the aspirations generated by American democracy clashed head on with the realities of its class structure. (Brint & Karabel, 1989, p. 9)

Almost immediately after the establishment of the community (junior) college, the American democratic populace came to perceive it as one way to increase opportunities in postsecondary education and expand access to four-year institutions (Brint & Karabel, 1989). In spite of this perception, issues of inequality and stratification in higher education have been pervasive since colleges and universities expanded to become more accessible to the masses. This stratification, or the inequitable and differential ordering of people in a hierarchical system, often by demographic factors, is clearly visible in the enrollment patterns of postsecondary institutions (Grodsky & Jackson, 2009). For example, over the past several decades, large numbers of low-income and racially/ethnically minoritized students have attended community colleges as opposed to four-year schools (Ellwood & Kane, 2000; Lee & Frank, 1990; Wassmer, Moore, & Shulock, 2004; Whitaker & Pascarella, 1994). Enrollment in community colleges and four-year institutions also differs by race (Lee & Burkam, 2002), gender (Bobbitt-Zeher, 2007), parent education (Choy, 2001), and socioeconomic status (Ma et al., 2016). These differences in enrollment patterns are related to numerous factors, including

institutional selectivity (Bastedo & Jaquette, 2011) and unequal access to majors, such as STEM and education (Peter & Horn, 2005).

Despite these patterns of stratification and decades of research demonstrating its existence, many politicians still assert that the community college transfer mechanism can serve as a pathway to the bachelor's degree for low-income and minority students who are overall less likely than their white, middle- and upper-class peers to attend four-year institutions. Tuition-free community college policy proposals are a manifestation of this ideology (The White House, 2015), where advocates of these proposals assume an alternative pathway to the baccalaureate may reduce a portion of the ubiquitous stratification in postsecondary education. These proposals, combined with dated research and a lack of political attention to the societal forces that lead to and reproduce stratification in higher education, indicate that it would be prudent and timely to reexamine the community college transfer mechanism's effect on reducing stratification in four-year institutions.

This three-paper dissertation uses national, longitudinal data collected from 2002 through 2012, and released in 2016, to build upon the extant research on postsecondary stratification and community college transfer pathways and outcomes. While previous studies tended to separate theory analysis and empirical research (Sadovnik, 2007), this dissertation combines both these crucial research areas. The information in this dissertation offers scholars and policymakers an understanding of how postsecondary education is stratified, provides theories about why it is stratified, and gives an updated analysis of the community college transfer

pathway as one approach to reducing the pervasive issue of stratification in four-year institution attendance and outcomes. In all, this dissertation will help these communities anticipate the consequences of policies which seek to increase the enrollment in and reliance on the community college to open low-income and minority students' access to the baccalaureate degree.

The push for tuition-free community college has long been popular among politicians and Americans alike, in part due to the view that the expansion of education reduces economic inequality and social stratification given the tie between education and job attainment (Karabel, 1972; Kerckhoff, 2000, 2018). When President Obama announced his America's College Promise proposal in 2015, he argued tuition-free community college worked to expand access to technical certificate programs and increase student transfers to four-year institutions (The White House, 2015), and thus, the bachelor's degree. To encourage postsecondary attendance, at least 24 states, led by both Democrats and Republicans, currently offer some type of community college tuition relief for students who meet certain family income and/or curricular requirements (Powell & Kerr, 2019). Yet these institutions occupy the "bottom tier of a class-linked tracking system in higher education" (Brint & Karabel, 1989, p. 226): They are in effect the lowest form of formal postsecondary education available. In spite of this label, policymakers at the national and state levels have spent decades expanding access to these institutions.

Despite the apparent lesser status of community colleges, these institutions play a valuable role in American society. Taking the community college route to the bachelor's degree, for example, might reduce students' debt burdens due to the low

cost of attendance and therefore increase rates of degree completion (Fonte, 2011; González Canché, 2014). Community colleges also offer economically critical vocational and trades training and certification programs, such as HVAC management certificates and nursing licensure. Outside of these programs, community colleges provide education for non-traditional students, non-credit classes for community residents, and remedial or preparatory courses for degree-seeking students. Without a doubt, community colleges expand access to postsecondary education broadly (Hoachlander et al., 2003). Furthermore, in transfer-focused community colleges with strong articulation agreements (transfer credit agreements between two- and four-year institutions), some research indicates that the community college transfer function can create a viable pathway to the four-year institution for low-income and minority students (Ignash & Townsend, 2000; Melguizo et al., 2011).

While community colleges have indisputable areas of success, such as those noted above, theories of stratification suggest that expanding access to the community college, and therefore the transfer mechanism, is not sufficient to markedly change the inequities in access and outcomes in four-year institutions. Whether stratification is due to class conflict, the natural operation of a capitalist economy, or other reasons such as White Supremacy and racism, decades of study make plain the imbalance between the equity goals of education and the unregulated and highly stratified access to institutions of higher education. An analysis of modern day education reveals an “...eloquent testimony to the ability of the well-to-do to perpetuate in the name of equality of opportunity an arrangement

which consistently yields to themselves disproportional advantages, while thwarting the aspirations and needs of the working people” (Bowles & Gintis, 2007, p. 56). That is to say, those with power, privilege, and access may use education in a way that furthers their interests, despite perceptions that anyone can advance in education as far as their ambition can take them (Brint & Karabel, 1989; Lucas, 2001; Schudde & Goldrick-Rab, 2015). The community college’s impact, or lack thereof, on stratification in postsecondary education, and specifically four-year institutions, is a testament to this tension between access and equity.

Data-led efforts to “test” theories of stratification have decades-old roots (Brint & Karabel, 1989). Much of the data used in previous studies comes from large, national longitudinal surveys conducted in the 70s and 80s. Much less comes from the 1990s and virtually none comes from the current century. Since the time these data were collected, attendance at postsecondary schools has more than doubled (Davis & Bauman, 2013), racial demographics have shifted (Hobbs & Stoops, 2002), and laws and policies governing higher education funding and K-12 college preparatory standards have evolved (Pew Charitable Trusts, 2019). Together, these changes and the widespread policy discourse related to community college pathways signify the need for an updated and integrated analysis on stratification and transfer student pathways in the postsecondary education system.

As noted previously, this three-paper style dissertation aims to inform education policy development by using recent national, longitudinal data to examine whether community colleges, via the transfer function, reduce stratification at four-year institutions and in bachelor’s degree attainment. To do so, Article One

examines theories related to stratification in postsecondary education and Articles Two and Three analyze recent enrollment and upward transfer patterns between community colleges and four-year institutions, degree attainment, and time to degree completion. These papers, taken together, provide a story of how and why stratification exists in postsecondary education and how significant a role, if any, the community college transfer mechanism might play in changing the current stratified make-up and outcomes of four-year institutions.

Article One, entitled “Stratification in Higher Education,” examines the sociological concept of stratification within the context of postsecondary education, uses extant data to demonstrate the existence of stratification in postsecondary education, and discusses what each theory of stratification might say about the ability of the transfer mechanism to reduce stratification in four-year institutions and its outcomes. This article uses an approach developed by Alan Kerckhoff who defined stratification as both a condition and a process (Kerckhoff, 2000), to examine how and why stratification exists. Stratification as a condition denotes the placement of groups with specific characteristics at certain levels within a system whereas stratification as a process theorizes how those placements of groups develop and persist. This article uses theory as a lens through which to view stratification in postsecondary education and the possible reasons why stratification continues, despite decades of attempts to change these patterns.

This article is distinct from other papers on stratification in that it brings together the empirical and theoretical aspects of stratification within our current system of higher education and speculates what each theory would predict as the

consequences of tuition-free community college proposals. It breaks down stratification as a condition and identifies differences in enrollment patterns based on demographics such as socioeconomic standing, first generation status, race, and gender. The article then explores stratification as a process by breaking down theories of why stratification occurs in higher education. Finally, the article draws on each theory to hypothesize the impact of the community college transfer mechanism. With this knowledge, policymakers might better anticipate the consequences of policies, like tuition-free community college, enacted with the goal of equalizing the postsecondary playing field via the transfer function.

The analysis of patterns and theories of stratification sets the groundwork for Articles Two and Three, which take a purely empirical approach to stratification. Based on an updated dataset of student pathways in postsecondary education, Articles Two and Three compare the community college and four-year attendance and outcome patterns of bachelor's degree aspirants. The goal is to discern if the transfer mechanism is currently operating in a way that opens access to four-year institutions and if it enhances the educational outcomes for less traditional enrollees. It also seeks to gauge who may be sorted and "cooled out" by the community college (Dougherty, 1992).

Article Two, entitled "A Study of Stratification in Postsecondary Education: Demographic Patterns in the Postsecondary Enrollment of Bachelor's Degree Aspirants," examines current conditions of stratification to see whether community colleges are enrolling and transferring students who look demographically different from those who attend four-year institutions as native enrollees. More specifically,

Article Two asks whether community college enrollees and transfer students, as two distinct groups, are demographically similar to native four-year enrollees in terms of family socioeconomic status, race, sex, and first-generation status when controlling for high school GPA and intent to obtain a bachelor's degree.

The concentration of low-income and minority students at community college may be problematic if community colleges do not increase access to four-year institutions via the transfer mechanism for those students who wish to obtain a bachelor's degree. In this scenario, community colleges may contribute to the maintenance or reproduction of social inequality (Lucas, 2001). Conversely, should the data indicate that community colleges enroll and transfer students who are demographically different than native four-year students, such a pattern would signify that community colleges are helping to change the stratified nature of enrollment patterns in four-year institutions.

Research which demonstrates that community colleges overall provide alternative access to the four-year institution, especially for minority and low-income students, is limited; extant evidence suggests community colleges may deter these students from attending four-year institutions (Cabrera, Burkum, & La Nasa, 2005; Dougherty & Kienzl, 2006; Doyle, 2009; Long & Kurlaender, 2009; Sandy, Gonzalez, & Hilmer, 2006). Research-supported explanations for this deterrence indicate many community colleges do not offer supports that help facilitate transfer to four-year institutions in areas like financial aid, the transfer of credits, or the four-year college application process (Dougherty, 1994; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Researchers theorize that the dearth of transfer

support in these areas comes from the multiple missions of community colleges (Baime & Baum, 2016, p. 3). Those institutions which lack a focused mission on transfer support often result in lower levels of transfer to four-year institutions (Dowd et al., 2013).

Community college students who do not transfer frequently withdraw from coursework or switch their focus to vocational programs (Dougherty, 1992). As Dougherty (1992) explains: "...community colleges often inadvertently dampen student interest in transfer by drawing them into their occupational programs" (p. 196). While vocational tracks in community college provide skill and opportunity for the job market, these tracks often lead to blue collar work, as opposed to the higher paying professional opportunities offered by the four-year institution (Pincus, 1980). Extant research indicates that the concentration of low-income and minority students at community college means the jobs associated with the four-year institution are out of reach due to low rates of transfer. Using an updated dataset, Article Two aims to discern if the transfer patterns found in prior literature reflect current transfer patterns.

Article Three is entitled "Measuring Community College Success in Democratizing Baccalaureate Attainment." It takes the stratification analysis one step further and into the democratization versus diversion debate, a subsection of stratification research, to determine if community college transfer students are obtaining their degrees at the same rates and in the same amount of time as native students. Specifically, the first analysis in Article Three looks at the impact of community college attendance, pre- and post-transfer, on bachelor's degree

attainment when controlling for degree expectations, high school GPA, first generation status, race, sex, and family SES. The second question of Article Three analyzes the impact of community college attendance on time to degree completion, controlling for high school GPA, family SES, race, first generation status, and sex. These questions will grant insight into whether the community college transfer mechanism might democratize the stratified outcomes (degree attainment and time to degree) at four-year institutions.

The origins of joining the terms democratization and diversion in the field of community college transfer and stratification research are difficult to trace, though the usage seems to have been popularized in the early 1970s. On one side of the argument, the democratization view posits that the community college expands access to postsecondary education and the bachelor's degree for a broader swath of students than traditional four-year institutions (Lee et al., 1993; Melguizo et al., 2011; Melguizo & Dowd, 2009; Monaghan & Attewell, 2015). On the other side, the diversion approach theorizes that community colleges actually keep students out of four-year institutions by channeling them into vocations or out of postsecondary education entirely (Alfonso, 2006; Doyle, 2009; Long & Kurlaender, 2009; 2015; Sandy et al., 2006). This dissertation seeks to update this debate and examine whether community college transfers obtain degrees at the same rate and in the same amount of time as native four-year enrollees.

Article Three's focus on bachelor's degree attainment is important due to the "sheepskin effect" of this degree milestone: Returns to bachelor's degrees have higher labor market returns than returns from years of postsecondary schooling,

certificate programs, and associate's degrees (Jaeger & Page, 1996). The length of time it takes for degree completion is also important because the opportunity costs of community college might outweigh the benefit of the low-cost or tuition-free aspects of community college attendance if transfer students have to delay job attainment. A delay in job attainment could be particularly impactful for low-income and minority students, who may not be able to afford the loss of earnings. Article Three seeks to update the democratization versus diversion literature to discern if the community college can democratize access to four-year institutional outcomes or if community college transfer students experience a penalty in terms of their degree attainment and/or time to completion.

Articles Two and Three use data from the Educational Longitudinal Study of 2012 (ELS:2002) to examine the postsecondary enrollment patterns and graduation rates for students who intended to obtain a bachelor's degree. The ELS:2002 data were collected, cleaned, and imputed by the National Center for Education Statistics (NCES). This dataset is a nationally representative, longitudinal study of students during their secondary and postsecondary experiences. Data were collected from student participants, their parents/guardians, math and English teachers, and school administrators. Starting with 10th graders in 2002, NCES re-administered variations of the survey in 2004, 2006, and 2012. In 2005 and 2013 students' school transcripts were also collected. The surveys generally collected information on student intent, educational experiences, and life milestones. The purpose of ELS:2002 was to track the patterns of college access and persistence of students from high school through their post-secondary and/or labor market outcomes.

These data give us updated insight on community college enrollment, transfer, and outcome pathways in postsecondary education; they can be used to determine the transfer function's effect on stratification in four-year institutions.

The questions in articles Two and Three were analyzed using a complex samples logistic regression. Logistic regression itself has many advantages over other analyses, particularly when the dependent variable is dichotomous or binary. For example, logistic regression can handle non-linear effects and does not assume normal distribution of error terms, homogeneity of variance, or a linear relationship between the independent and dependent variables. The large sample size of ELS:2002 allows for the use of logistic regression.

Incorporating a complex samples design is important in this analysis since ELS:2002 cannot be considered a simple random sample. This design also strengthens the logistic regression analysis because it accounts for the non-randomness of the sample to more appropriately estimate standard errors and biased parameter estimates. When properly weighted using the complex samples design, as is done in this dissertation, the ELS:2002 dataset is considered nationally representative of the respondent population in 2002 (National Center for Education Statistics). The generalizability of the sample to the national level is beneficial in that these broad trends can inform national policy development.

Using this specific analysis on the ELS:2002 data positions this research to make several empirical contributions to the field. First, the full ELS:2002 dataset has only recently become available, so analyses of the data are limited. Furthermore, analyzing stratification using a complex samples logistic regression is rare, in part

because the complex samples model was not available in many statistical packages until more recently. Yet this form of analysis is well-situated for the research questions in this dissertation: Logistic regression allows for the use of multiple independent variables and determines how they influence a dichotomous outcome variable, such as whether a student graduated. Additionally, logistic regression reduces confounding factors in the analysis and presents us with the odds of student outcomes for our given questions (Sperandei, 2014), odds being an easily interpreted representation of these findings (i.e. a certain demographic having 200% higher odds of being a community college student).

As noted at the top of this paper, many perceive the community college to be a viable route to the four-year institution. This perception combined with community college's current prominence in policy discourse has reawakened a debate around whether the transfer mechanism can be the link that contributes to the reduction of stratification in attendance and outcomes at four-year institutions. Stratification theories and past research on the topic of transfer undergird the notion that the community college transfer mechanism is unlikely to reduce this stratification. However, updated research on the topic of transfer patterns is needed to further this debate. This dissertation aims to update this body of research and influence how policymakers and researchers think about the problems of and solutions to stratification in attendance and outcomes at four-year institutions.

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ARTICLE ONE: EXAMINING STRATIFICATION IN HIGHER EDUCATION THROUGH SOCIOLOGICAL THEORY

Recent political discourse surrounding tuition-free community college has reawakened a debate on whether the community college transfer function operates to lessen or reinforce the stratified demographic patterns inherent in four-year college enrollment and outcomes. What is often missing from this policy debate is a clear discussion of how and why postsecondary education and its outcomes are stratified and whether policies, such as the currently popular tuition-free community college proposals that seek to expand the transfer function, might lessen some of the stratification, here meaning the persistent unequal distribution of students in four-year institutions by demographic characteristics like socioeconomic status and race (Grotsky & Jackson, 2009).

When President Obama announced his America's College Promise proposal in 2015, he argued tuition-free community college worked to expand access to technical certificate programs, increase student transfers to four-year institutions via the transfer function, and improve economic opportunity (The White House, Office of the Press Secretary, 2015). Decades of effort predate President Obama's proposal; policymakers have historically used the community college's transfer function as an attempt to reduce stratification in the enrollment patterns and outcomes at four-year institutions (Mercer, 2018). The popularity of these efforts is due, in part, to the fact that reduced stratification in bachelor's degree attainment has the potential to reduce economic inequality by providing opportunities for high-paying, white-collar jobs (Kerckhoff, 2000, 2018). Despite past efforts, the American

structure of postsecondary education continues to be a “pyramid of institutions” that seem to create opportunity and protect privilege at the same time (Labaree, 2013).

The national discourse and persistent stratification in postsecondary education give rise to the urgent need to reexamine the relationship between stratification in postsecondary education, the community college transfer function, and four-year college enrollment outcomes. This article provides an overview of the form and function of stratification in postsecondary education, explores several prominent theories about why stratification exists in society, and discusses the impact the community college transfer pathway may have on patterns of enrollment and outcomes in four-year institutions.

STRATIFICATION: AN OVERVIEW

In American society, stratification is pervasive and apparent in everyday society. For example, sports teams are stratified by gender, age, and ability; cars, airlines, stores, and hotels are stratified by cost, function, and luxury; professions are stratified by salary, title, prestige, and skill. As noted sociologist Kerckhoff explains stratification:

The stratified condition of industrial societies is defined in terms of a hierarchy of classes or of occupational positions within the labor force... Social stratification as a process refers to the operation of the mechanisms through which each generation becomes distributed into those stratified occupational levels. (Kerckhoff, 2000, p. 453)

As this quotation demonstrates, Kerckhoff defines stratification as both a condition and a process in broader society, but this description also applies to how the education system is stratified in America.

Stratification in education is pervasive, particularly in postsecondary education, and is evident in how it is differentiated by school type (two-year, four-year), institutional and degree prestige, and student composition. Stratification is also evident in the differential outcomes from characteristics of postsecondary institutions (public, private, ivy league) and their associated credentials. Some researchers argue that education is one of the greatest creators or perpetuators of stratification in society due to its stratified form and function (Alon, 2007; Gerber & Cheung, 2008). This paper uses these notions, of stratification as a condition and a process, to unpack how and why stratification is manifest and reinforced in postsecondary education.

Stratification as a condition manifests itself in the vertical and horizontal dimensions of higher education. As Gerber and Cheung describe: "...the level or quantity of education received (number of years or highest degree) as the vertical dimension of education and the different types or quality of education received at a particular level as comprising the horizontal dimensions" (2008, p. 300). Higher education was once primarily about the level of education received (i.e. vertical stratification); however, as education expanded, horizontal stratification became more pronounced, in terms of the degree students received (e.g. Certificates, Associate's, B.A., B.S, M.A., M.S., M.Ed., Ed.D., Ph.D., M.D.) and by the characteristics of the institutions granting the degrees (e.g. Ivy League, for-profit, public, private,

online programs). The conditions of education, as defined by this paper, encompass both the vertical and horizontal stratified dimensions of postsecondary education.

The process of stratification seeks to explain these conditions in order to understand inequality in educational access and “...the pattern of intergenerational (im)mobility experienced by a population or sub-population” (Grodsky & Jackson, 2009, p. 2347). In higher education in particular, stratification as a process takes the conditions of education and seeks to explain why various groups occupy or achieve various enrollment patterns and outcomes. The process is a system of inputs and outputs: If and where students enter into higher education are often determined by their background (race, socioeconomic status (SES), gender, K-12 quality, parental education level); and the result or output of their education is displayed in their placement and achievement in the workforce (e.g. differential wages, opportunities, pathways) (Grodsky & Jackson, 2009). In essence, social stratification as a process in this paper refers to the role higher education plays in the hierarchical organization of people in society through sorting students primarily by family background, racial and gender demographics, and socioeconomic identity.

STRATIFICATION AS CONDITIONS: MANIFESTATIONS OF STRATIFICATION IN EDUCATION

Conditions of stratification within higher education vary widely and intersect at various points. For example, race and gender might play a role in where students attend college just as much as where they attend college plays a role in their occupational destination. However, race and gender also play a role directly in occupational destination. Separating these layers of stratification into race, gender, and college-type reveal how demographic identities are stratified within education.

Their depiction in the following section should not be interpreted as stand-alone conditions, but rather as significant characteristics that influence the type and level of education students experience.

CONDITIONS AS DEMOGRAPHIC IDENTITY

Research has consistently shown that the demographics and backgrounds of students significantly affect their postsecondary experience, including the selection of major, college type pursued, and overall persistence to degree. This section highlights several demographic conditions that impact students' postsecondary path: race, SES, parental education, and gender.

In pure statistical terms, race plays a significant role in issues of stratification because Black and Hispanic students are less likely to get a high quality education (Lee & Burkam, 2002) and more likely to be low SES and have parents without college degrees (Lee & Burkam, 2002). Researchers consistently find that Black and Hispanic students experience conditions that negatively affect college enrollment, persistence, and completion (Cabrera & La Nasa, 2001). These findings are generally undisputed in the research community. However, researchers report differing findings on the *role* race plays in stratification due to the difficulty of isolating the impact of race on educational trajectory: Interpretation of data can be a challenge since race intersects with characteristics such as SES and parental education, as noted previously (Alon, 2007).

More easily isolated is the impact socioeconomic status has on students' postsecondary academic achievement and pathway. In particular, the connection between SES and math achievement has been well documented. As recently as 2016,

the Education Pays report found a significant correlation between students' SES and math quartiles. For example, only 8% of students in the highest math quartile were from the lowest SES quartile and half of the students in the same highest math quartile were from the highest SES quartile (Ma et al., 2016, p. 12). The 2016 Education Pays report also noted that math scores were correlated to persistence to degree: Of students who enrolled in college right after high school, bachelor's degree attainment rates were 15% overall for those in the lowest math and SES quartiles and 81% for those in the highest of quartiles (Ma et al., 2016, p. 13). The findings from this report illustrate the connection between student SES and academic achievement: Students who reside in lower SES quartiles tend to have lower math achievement and students with lower math achievement tend to have lower degree completion rates.

Perhaps the most significant issue with the correlation between socioeconomic status and academic achievement is how achievement can affect students' futures (Lucas & Berends, 2002). Early academic performance, in areas like math noted above, is a significant determining factor of future academic opportunities. In many schools, practices like tracking perpetuate inequalities because past academic performance builds upon itself and creates channels that determine the level, prestige, and rigor of future classes (Akos et al., 2007). The level, prestige, and rigor of classes in turn affect long term educational access and opportunity. As Labaree (1997) notes:

With students sorted according to both putative ability and the requirements of different job roles (high reading group vs. low reading group, academic

track vs. vocational track), schools create educational channels that efficiently carry groups of students toward different locations in the occupational structure. (p. 50)

These channels, generally developed during early academic participation and impacted by SES, become pronounced in higher education and have lifetime effects for students and their families (Lucas, 2001).

The educational level of a student's parents can play as significant a role as SES in academic achievement. However, unlike race, parental education appears to have significant stand-alone effects on children's schooling: Parental education often influences how parents prepare their children academically and the extent to which parents can create or facilitate opportunity for their children (Lareau, 2011). Using a multivariate analysis, Choy (2001) found parental education to be an indicator of access to and graduation from postsecondary institutions (p. 29). The parental education link exists not just because of the absence of academic guidance by parents that Lareau found above. Researchers also note that "...there are substantial differences in college knowledge by parent race/ethnicity and social class. Black and Hispanic parents are less likely than White parents to be able to estimate the costs of college, as are less educated and lower income parents" (Grodsky & Jones, 2007, p. 764). What Grodsky and Jones found may be a critical link in the parental education narrative: It is not that parents with lower education do not want the best for their children. Rather, they lack the knowledge about how to maximize their child(ren)'s educational opportunities in our formal schooling structure, especially in higher education.

Gaining access to education is not the only issue faced by students whose parents have low levels of education. Some first generation students (i.e. students whose parents are not college educated) make it to the postsecondary institution but struggle to persist to a degree or certificate (Pascarella & Terenzini, 2001). While researchers debate the exact reasons for these challenges of persistence, significant evidence points to a lack of support and guidance by family in adapting to the postsecondary environment (Pascarella et al., 2004). Additionally, researchers Lohfink and Paulsen (2005) found in their analysis of first generation students' persistence to degree a strong intersection of race, class, and gender that aligned with parental education status. Yet these factors, like gender, also contribute to stratification independently of other factors.

Although the overall numbers for women obtaining degrees from postsecondary institutions have increased dramatically since the early twentieth century, a close look at the levels and types of degrees obtained by men and women demonstrates the continued existence of stratification by gender in higher education (Bobbitt-Zeher, 2007; Peter & Horn, 2005). The National Center for Education Statistics (NCES) 2005 report on gender in postsecondary education found that even though women were enrolling in and completing postsecondary education at a higher rate than men, they were not only stratified by major but also by post-graduation earnings. In the cohorts observed in the NCES study, researchers identified a pattern of stratification over three decades (1981, 1991, & 2001), where “men were more likely than women to earn bachelor’s degrees in business, engineering, and social sciences and history, while women were more likely to earn

degrees in education, health professions and related sciences, and psychology” (Peter & Horn, 2005, p. 19). While women appear to be outpacing men in postsecondary education broadly, the low percentage of women in degree programs related to science, technology, engineering, and math (STEM), degrees which are often high-paying and prestigious, continues (Dowd, 2012). As noted previously, the stratification by fields of study is problematic because the financial returns to these degrees (Peter & Horn, 2005, p. 39) and the barriers to female success in these fields (Thomas & Drake, 2016) can be significant determinants of lifetime earnings. The NCES findings and data from Peter and Horn make obvious the fact that stratification by gender has persisted over the decades, despite the significant overall increase of women in postsecondary education.

The conditions identified in this section, race, SES, parental education, and gender, all demonstrate ways people are stratified into higher education. For decades, various politicians have attempted to rectify these inequalities and have done so with some success. Studies report a historical trend of gains in low-income and other minority students’ outcomes (i.e. higher test scores, graduation rates) (Melguizo et al., 2011; Monaghan & Attewell, 2015). However, these students are still at a relative disadvantage because the gains made by minority students mirror gains by wealthier, more privileged students. A study of student data from 1972-2004 showed that “low-income students have shown strong gains in indicators that lead to admission to highly selective schools... but higher income students have simultaneously made even stronger gains on these same indicators” (Bastedo & Jaquette, 2011, p. 319). These authors’ research reveals a significant issue: As

education has expanded, upper-income students have been able to remain ahead of their peers in terms of academic achievement and occupational outcomes. The ability of higher-income students to outpace others has been, in part, due to decades of stratification within higher education, which has granted the privileged the opportunity to build upon past achievements generation after generation (Alon, 2009).

As this section has indicated, group membership characteristics overlap and tend to play a significant role in student access to and persistence through higher education and in occupational outcomes. However, stratification also exists in the structure of education itself and manifests as the characteristics of postsecondary institutions. The next section explores these characteristics of educational institutions and the impact these characteristics have on labor market outcomes.

CONDITIONS AS CHARACTERISTICS OF THE EDUCATIONAL SYSTEM

The multilayered framework of education is stratified, with different access points and rewards assigned to various levels of education. These levels, particularly in higher education, manifest themselves as vertical dimensions of stratification, such as school diplomas, certificates, associate degrees, bachelor's degrees, master's degrees, and doctorates. Researchers have identified a strong correlation, one that has existed for decades, between earnings and the level of education achieved (Ma et al., 2016). However, the expansion of higher education in the 20th century has been accompanied by the differentiation of education beyond vertical stratification: School prestige, school type, and majors are among the most common characteristics of education that constitute horizontal stratification. This

section examines two prominent characteristics of institutions within higher education that have differential returns: school prestige and within-school stratification.

Researchers have found that despite obtaining the same levels of education, significant differences in income and occupational status remain due to variations in the characteristics of institution(s) attended (Gerber & Cheung, 2008, p. 300). These differences are often found in school quality or prestige, measured by institutional selectivity, and offer differing financial rewards. Many economists agree “...that the economic returns of graduating from selective institutions are higher than for nonselective institutions, and these returns have increased over time” (Bastedo & Jaquette, 2011, p. 319). However, some researchers argue that returns to attending more prestigious or selective institutions are simply holdovers from other variables that affect whether one attends a selective or elite institution to begin with (Gerber & Cheung, 2008, p. 303), such as being of higher SES or experiencing other forms of privilege. Nevertheless, research overall indicates that selective institutions tend to result in higher incomes and better occupational placement post-graduation.

School characteristics are important beyond the financial returns they bestow. School characteristics are relevant because school types socialize students into respective places in society. In higher education, this socialization means schools help students acquire the “gloss” (or social polish) that cultivates social capital and develops social contacts, which advance opportunities in graduate education and facilitate occupational success (Mayes, 1977, p. 19). Learning environments that do not impart the social “gloss” put those students at a

disadvantage, especially in the eyes of recruiters who operate on the presumption that elite schools provide better preparation for occupational success.

Schools that do not provide the elite social “gloss” and training are commonly associated with the community college and for-profit sectors, among other institutions that offer lower financial returns to education (Deming et al., 2012; Denice, 2015). While the community college provides many social benefits in the form of vocational certificates and community education, the for-profit sector does not have these redeeming qualities. The growth of for-profit colleges has expanded the educational landscape drastically; their low barriers to entry, questionable academic rigor, and predatory financial practices give them the reputation of being among the least prestigious and most problematic of postsecondary institutions (Cottom, 2016). Though these institutions offer the same degrees public and private institutions provide (i.e. certificates, two-year, and four-year degrees), mounting evidence suggests that the economic returns from these institutions are lower.

Denice (2015) used data from the National Longitudinal Survey of Youth from 1997 (NLSY97) to examine stratification within higher education, with specific comparisons between the post-college earnings for for-profit and public/private school attendees. When compared to other educational sectors, for-profit colleges enroll greater proportions of Black, Hispanic, and low SES students and the associate degrees they award return lower earnings than those from similar non-profit institutions (Denice, 2015, p. 174). Additionally, for-profit schools are more expensive, have higher loan default and dropout rates, have graduates who are more likely to be unemployed years after graduation, and enroll more non-

traditional, low-income, and minority students than their non-profit and private peers (Deming et al., 2012). This combination of institutional characteristics, attrition rates, and employment outcomes is a concern for those who seek to reduce inequalities within the education system.

The characteristics of the school a student attends can often have a significant effect on persistence to degree (Peltier et al., 1999), income after graduation (Gerber & Cheung, 2008), and the likelihood of additional schooling (Zhang, 2004). School characteristics also sit at the intersection of race, gender, SES, and parental education levels: The level of schooling and school characteristics students experience are often related to their background (or group membership conditions). A consequence of stratified conditions or characteristics in education is a lack of mobility for students within the system: Access points and rewards to education are often granted based on pre-determined qualities outside students' control (e.g. socioeconomic status, parental education) and students have a limited ability to adjust their pathway. An inability to move vertically within the system can have lifelong consequences (Lucas, 2001).

The limited mobility students experience in education continues on into the labor market (Kerckhoff, 2000). Many researchers find a connection between the characteristics of the educational institutions students attend and students' occupational placement (Bills, 2003). For example, institutional selectivity as a school characteristic matters because... "[r]esearchers have found a positive causal relationship between college selectivity and earnings" (Ma et al., 2016, p. 27). Additional analyses of these findings suggest that schools do not necessarily prepare

and train individuals for a place in the occupational structure, but instead communicate to employers a worker's ability to learn job skills and be productive in the workplace. In other words, education signals to employers, via grades, school prestige, credentials, and other academic indicators, the candidate's future technical performance and capabilities on the job (Brown, 2001, p. 22). The importance of what education communicates to hiring managers is an example of why the characteristics of an educational institution matter.

As mentioned throughout this paper, the group membership aspects of stratification interact with the placement of students within various institutions of higher education. However, many stratification theorists argue it is not coincidental that certain groups more frequently occupy certain levels of education or types of schools and that the characteristics of the institution(s) attended bear varied results in terms of occupational placement and earnings. These theorists posit that larger social and/or structural forces perpetuate these patterns of stratification. As Karabel (1972) notes, data on occupation, income, and education are linked, with social class position being related to the prestige of the college attended. Relatedly, the fact that lower SES students disproportionately attend community colleges and other institutions with lower financial returns means they are therefore channeled into blue-collar and service-sector jobs as opposed to the white-collar jobs of the higher-status four-year institutions. The next section explores the forces that may create or reproduce these systems of stratification in higher education and the respective job market.

STRATIFICATION AS PROCESS: THEORIES OF STRATIFICATION

This paper has so far covered stratification by conditions within postsecondary education: demographic divisions within and characteristics of the educational system. The assumption underlying the previous section was that how students are stratified into higher education is generally a product of their background, socioeconomic status, and identity, and that assumption is backed up by research. However, that assumption only demonstrates *how* students are sorted in education. Other theoretical orientations address *why* students are stratified into positions in higher education and, ultimately, the occupational structure. This section describes three prominent theoretical frameworks researchers have identified to explain stratification within higher education.

The first and second subsections explore conflict and functional theories, respectively, two core pillars of theory in stratification research. The third portion of this section explores credentialing theory, which examines the broader operation of stratification via credentials in society. The subsections examine the community college transfer function and discerns what these theories might postulate as the effect of this pathway on the attendance patterns and outcomes at four-year institutions. This theorizing exercise comes at an important juncture in policymaking, with the renewed debate about whether the community college transfer function might provide a way to increase diversity at four-year institutions.

CONFLICT THEORIES

Conflict theory, at its core, assumes a tension in society and its structures based on the competing interests of individuals and groups. These groups are in

constant tension: They struggle for power and those with the most power are often victorious because of their influence on structures and organizations (Collins, 1971). Their victory is cyclical because through their victory they continually determine how structures and organizations operate, and ensure they operate in ways that keep those with power powerful (Ballantine, 1997, p. 9). From the conflict theorist's perspective, this conflict and the cyclical imbalance of power lead to unequal access to postsecondary institutions and the general stratification within them (Bowles & Gintis, 2002).

These tensions, clearly seen when viewing education through the lens of conflict theory, illuminate the inherent contradictions and divergent goals in society's approach to postsecondary education. Labaree identifies three distinct purposes for education: democratic equality, social efficiency, and social mobility. Each of these purposes provides insight into the different levels of interest in education: "The first goal expresses the politics of citizenship, the second expresses the politics of human capital, and the third expresses the politics of individual opportunity" (Labaree, 1997, p. 42). The first goal serves the public good, the second serves the market and private sectors, and the third serves the individual. In capitalist America, Labaree argues, it is rare to see all goals met when public, economic, and private needs collide.

Labaree's characterization of the tensions inherent in the purposes of education has roots in conflict theory. Americans ostensibly believe equally in free markets and the idea that the opportunities education provides are key to an equitable society. However, American society consistently finds itself at odds with

its own desire to have individual liberty, free markets, and equity all at once. As Labaree (1997) notes:

Unfettered economic freedom leads to a highly unequal distribution of wealth and power, which in turn undercuts the possibility for democratic control; but at the same time, restricting such economic freedom in the name of equality infringes on individual liberty, without which democracy can turn into the dictatorship of the majority. (p. 41)

Conflict theory posits that elites employ their control of institutions to perpetuate stratification in several ways. For example, to remain on “top” of the social structure and limit the upward mobility of others, Collins (1979) argues elite groups and those wanting to gain entrance to elite groups use education as a way to certify their own legitimacy. In other words, “[s]ocioeconomically advantaged actors secure for themselves and their children some degree of advantage wherever advantages are commonly possible” (Lucas, 2001, p. 1652). The implication here is that actors make choices to secure overall educational and occupational success or maintain their social status. Harkening back to the social mobility goal, elites have therefore set personal interest above all else, which makes the democratic equality goal of higher education a secondary priority. This hierarchy of interests and control presents challenges for policymakers trying to impact the system through the educational system alone.

The methods employed by elite groups to maintain advantage are core to the conflict theory narrative in education: The premise underlying the theory is that

schools are used not necessarily to impart technical knowledge to students, but to pass on the “proper” speech, style, tastes, and manners appropriate to a designated status group (Collins, 1971) or “gloss” as was previously mentioned. As Hurn (1993) noted:

...schools whose graduates enter predominantly low-status occupations stress rule following, provide minimal discretion in choice of tasks, and teach obedience to constituted authority. Schools and universities that prepare students for elite positions, by contrast, encourage students to develop some capacity for sustained independent work, to make intelligent choices among many alternatives, and to internalize norms rather than to follow external behavioral rules. (p. 71)

To the conflict theorist, education serves as the mechanism by which individuals are prepared for work in society and indoctrinates people socially, culturally, and, sometimes, technically for occupational placement. Therefore, “insofar as a particular status group controls education, it may use it to foster control within work organizations” (Collins, 1971, p. 1011). Put another way, the elite control the system of education and, therefore, how and to what degree people are educated. Conflict theorists speculate that elites maintain their top status through a sort of cultural reproduction in their training, schooling, and social connections, where what the elites experience and value will determine the “gold standard” for education. Thus, those who already occupy a higher social status determine what is required to get ahead in the broader society.

The debate as to whether the community college transfer mechanism is a viable approach to lessen stratification at four-year institutions and provide access to the bachelor's degree is easily understood in the context of conflict theory. While American politicians and others view the community college as a viable pathway to the baccalaureate (The White House, 2015), conflict theory posits that community college is simply a mechanism to divert certain students from four-year institutions before they get to the point of transfer. Put another way, community colleges provide the illusion that the opportunity to obtain a bachelor's degree exists for those statistically less likely to do so. However, students who transfer from community college to four-year institutions are those with the training and connections who likely could have attended these institutions in the first place and those who are diverted from transfer are non-elites who would, in this view, taint the legitimacy of the four-year institution (Mayes, 1977).

Beyond diverting students, the system of transfer itself may be rooted in conflict theory because the transfer mechanism still limits access to four-year institutions with more elite characteristics. For example, barriers related to *where* students can transfer exist and these barriers may perpetuate stratification through limiting access to more elite institutions. Of the almost 1,700 matriculated students each year, Harvard, on average, admits three community college transfer students annually. Princeton boasted in Fall 2018 that it admitted 13 transfer students as part of its recently reinstituted transfer program. Princeton admits almost 1,900 students annually. Data from the Jack Kent Cooke Foundation demonstrate that Princeton and Harvard are in line with the national trends on transfer: Community

college transfers make up 21, 10, and 5 percent of the student populations at less competitive, highly competitive, and most competitive institutions respectively (Glynn, 2019, p. 4). If access to the baccalaureate for low-income and minority students is expanded through the community college transfer function, social reproduction is still a significant issue in this process due to the variations in institutional characteristics available to students.

Conflict theory argues that a sort of smoke screen effect exists in higher education, where the filtering mechanism of community colleges is masked by the national ideology that students who fail to transfer fail because of a shortcoming of their own and a lack of earned merit, instead of as a result of a systematic sorting by class, race, and other criteria. Therefore, this theory posits that to expand access to the four-year institution via the community college transfer function will do very little to change the stratification present in four-year institutions because only students who have the means, “gloss,” and preparation to go to four-year institutions in the first place will transfer.

FUNCTIONALIST THEORY

Functionalist theory is a complex theory in that it is diverse in the ways people characterize and operationalize it. Functionalists begin with the assumption that all individuals in society and the institutions within it are interconnected: Each component, like education, serves a vital role in the function of society. Education’s role is to transmit the “moral and occupational education, discipline, and values as necessary for the survival of society” on to each of the students it touches (Ballantine, 1997, p. 8). Schools are therefore important mechanisms that function

as training grounds to prepare children for their role in society. This social preparation via education is critical to determining the places these children end up in the greater social and occupational structures.

The functionalist theory also posits that stratification in education manifests itself in the occupational structure because the education and labor markets are so tightly coupled. However, unlike conflict theory, functionalists contend that the stratification present in education is necessary “...for motivating talented individuals to achieve high-status positions” (Hurn, 1993, p. 64). In the functionalist view, the opportunities to move higher on the occupational ladder are generally available to all students, provided they have the drive to achieve.

Functionalism, by these standards, is highly meritocratic: Schooling and the needs of the labor market determine where a person ends up in postsecondary education and the occupational structure. Therefore, education and the labor market are tightly coupled in functionalism. This theory...

...stresses the multiple functions that schools perform in modern society – the production of cognitive skills, the sorting and selection of talents, the creation of an informed citizenry – and it maintains that these functions could not be adequately performed without extensive and elaborate formal schooling. (Hurn, 1993, p. 63)

The functional paradigm says schools meet the needs of society by producing skilled and capable future employees and citizens and grants those with the most skill higher rewards.

An approach to education policy and reform that aligns well with the functionalist theory is the “technocratic-meritocratic school” of thought. This view sees the economy as a technical system, where educational achievement and employment are based on technical skill and merit (Bowles & Gintis, 2007). This ideological view posits that any unequal distribution in skill or social mobility is a natural occurrence. That is to say, socioeconomic status and power come from an imbalance in the natural distribution of aptitude and skill rather than due to a structural deficit in society (Davis & Moore, 1945). The technocratic-meritocratic view acknowledges the existence of structural inequality. However, the theory posits that simply expanding access to education will, in turn, create an efficient and equitable distribution of social standing (jobs, income) because the competitive orientation of schooling allows for natural talents and drive to flourish (Bowles & Gintis, 2007).

While less research supports a purely functionalist approach to understanding stratification in higher education (Collins, 1971, p. 1009) and this summary is a simplified version of a complex and evolving theory, it is an important theory in that it provides a view of education that tightly couples education and occupations. In functional theory, community colleges serve a valuable purpose in preparing students for vocations and other careers as the market necessitates: Any expansion of schooling is explained as simply meeting the needs of our expanding modern economy or giving people the opportunity to expand their economic prospects via additional schooling. Functionalist theory provides significant insight into how skill and technical requirements have changed over time though generally

omits significant discussions of power and elite control in the broader society (Collins, 2007).

Looking at the transfer mechanism of community colleges with a functionalist lens, an expansion of the transfer function would only prove necessary if the market required an alternate way to reach the four-year institution. This alternative option could be necessary in an economic downturn, for example, where the often less expensive community college route to the bachelor's degree would provide a cheaper pathway. In functional theory, expanding access to the community college transfer function may change the stratified nature of four-year institutions, but only for those students with the drive and talent to make transfer happen and only when the job market needs them. Additionally, all things being equal, the general expansion of education in this view serves to open up access to opportunities and social mobility without additional policies aimed at social issues to guide the expansion. However, all things are not equal in today's society, so an appreciation of the social dynamics and inequalities in society is critical to the development of successful education policies.

CREDENTIALING THEORY

Credentialing theory is a prominent notion that depicts how society allocates individuals in the occupational hierarchy based on relatively subjective educational qualifications (Brown & Bills, 2001, p. 1). In this view, credentials operate as a placement tool in the job market; they communicate to the hiring official a status or symbol which indicates an individual's qualifications for a position. This theory is not necessarily about the rationale for stratification but instead a mechanism that

facilitates its existence. That is, the credential itself is the instrument that is used to create and perpetuate inequalities in society.

Sociologists identify the education system's practice of credentialism as a powerful method used by the elite to maintain inequalities and power distribution.

The orientation in credentialing research is that education is a significant force, if not the most significant force, creating and maintaining stratification in society:

"Formal education of individuals is the dominant variable in social status attainment... [F]ormal education degrees [are] central to stratification" (Baker, 2011, p. 24). In credentialing theory, credentials provide opportunity and the ordered placement of people in society, which then grant opportunities and access that build upon the credential. In other words, opportunity begets more opportunity, where credentials create the foundation that determine the opportunities available to individuals.

Brown (2001) identifies four key components of credentialing. First, he notes that credentials are rooted in culture and are exclusive rather than focused on equalizing society and occupational knowledge: Credentials sort people and support the creation of hierarchies by making degree attainment more valued than experience and technical knowledge. Second, the relationship between the degree or credential assigned and the substantive competence of the degree holder is tentative, at best. The third component Brown identifies is that credentials create cultural barriers that elites use to judge people's worthiness for opportunity. Finally, he argues that credentialing, not the market, drives the expansion of education and increases the level and number of credentials attained. This expansion in turn raises

the level of credential(s) needed for employment because of the saturation of credentials in the labor market. Brown's tenets are generally research-supported and can be seen in the evolution of credentials and occupational placement in American history (Baker, 2011).

Brown characterizes within these components both the societal role of credentials as well as the structural underpinnings they support. The structure of society and schooling essentially justifies the existence of credentials as "...provid[ing] a legitimating account of the competence of citizens, the authority of elites, and the sources of the adequacy of the social system to maintain itself in the face of uncertainty" (Meyer, 2007, p. 134). The significance that credentials play in our society cannot be over-stated: Credentialism is rooted deeply into our educational, social, and occupational structures, where movement socially or within the labor market is quite often dictated by the credentials one holds (Collins, 2011).

Where functional theory posits that schools teach the skills necessary for the performance of occupations, credentialist theory argues people use credentials to gain access to occupations of varying prestige. Additionally, functional theory argues education has a direct technical connection to an occupation, whereas credentialism assumes that the credentials earned through schooling are not necessarily connected to the occupation to which they allow access. Instead of providing a direct skill connection, credentials provide a signal to employers that the candidate has the values and behaviors indicative of that level or type of schooling. Educational characteristics and the credential achieved, in this model, determine where people are positioned in the labor queue (Thurow, 1977).

Many researchers theorize that the disconnect between credentials and technical skills grants credentialism the freedom to legitimate wage inequality and promote labor exploitation. In *The Credential Society* (1979), Collins looked at the connection between credentialism and stratification. Though focused on public K-12 schools, he contends that schools are social institutions that teach and reward middle class values of competition and achievement, which in turn reward merit. Mayes (1977) concurs, noting that merit is simply the successful navigation of education institutions; Merit involves developing cultural capital with administrators and discovering how to achieve good grades with little effort. In his words, "Merit in mass institutions is heuristically defined as 'learning the rules of the game'" (Mayes, 1977, p. 21). Those who seem to succeed most in education and occupational settings have been able to learn these rules and have other advantages, often, in their favor (like Whiteness, money). For the elite, the rules have been imbued in them from childhood and they therefore have an easier time conforming. For those outside the elite realm, the transition to learning and conforming to the rules becomes far more challenging and, according to conflict theory, near impossible.

With a credentialed and meritocratic society, employers have carte blanche to discriminate against disadvantaged job applicants who do not have specific credentials, even though the credential is not directly related to an individual's ability to do a job (Lamont & Lareau, 1988). Yet credentials are the primary route to power in our modern society: The tie between education and job attainment is stronger than ever (Collins, 2007), with access to credentials in society uneven, at

best (Posselt et al., 2012). It is this cyclical system of educational access and credential attainment that sanctions persistent stratification in higher education.

If the community college transfer function manages to increase access to four-year institutions for low-income and minority students, credentialing theory dictates that the value of the extra schooling will be diluted and no longer carry the value it once did (i.e. the market will be saturated). Credentialing theory argues that even if transfer-oriented policies create more low-income and minority student transfers and bachelor's degree recipients, the result of increased baccalaureate access means the new standard in educational attainment will raise higher, much like how the returns to the high school diploma have gone down over the past several decades (Barrow & Rouse, 2005). Alternatively, the bachelor's degree could continue to be held in high esteem, but the characteristics of the institution(s) attended will become more critically important. In credentialing theory, education is driven by capitalism and the individual consumer. Thus, the expansion of access to the bachelor's degree will likely result in the devaluation of the credential or further horizontal stratification.

CONCLUDING REMARKS

Throughout history, theorists have speculated about how stratification occurs and is maintained in education and in the broader society. Stratification more particularly in higher education has become of increased concern over the past few decades, due in part to the drastic increases in postsecondary enrollment and the strengthened relationship between educational credentials and careers (Collins, 2007). Many recent reform efforts aimed at education, especially higher education,

have been undertaken with the aim to reduce stratification within the system and generally expand postsecondary access. For example, the previously mentioned tuition-free community college proposals aim to provide an alternate pathway to the bachelor's degree for low-income and minority students who are often disadvantaged in their pursuit of the four-year degree. However, scant evidence exists, theoretically and empirically, that this alternative pathway will alone reduce stratification in four-year institutions and its associated outcomes.

The functionalist theory is perhaps the only theory discussed in this paper that might support the notion that an expanded route to the bachelor's degree, like the transfer pathway, might diversify the four-year institution and its outcomes. Nevertheless, as mentioned previously, the functionalist approach to education has less research supporting its assertions compared to credentialing and conflict theories (Bowles & Gintis, 2007; Brown, 2001; Collins, 1971). Conflict and credentialing theories better incorporate the power dynamics and the structures inherent in a capitalist economy that influence agency (or a lack of), access, and outcomes. Combining these theories allows us to understand the technical requirements and changes in the credential and labor market and the societal forces that shape education.

Although the theories covered in this paper suggest that the transfer function may be a weak or ineffective means of addressing the persistent and pervasive issue of stratification in higher education, policymakers have consistently relied on the community college and its transfer function to address the stratified postsecondary sector. Therefore, it is important to see whether that confidence is warranted by

updating the extant, decades-old empirical research on the community college pathway to the bachelor's degree and its impact on stratification. To demonstrate the flaws or successes in the postsecondary pipeline, an updated analysis of the transfer pathway must be constructed to understand where in the pathway students are failing, if at all, or whether they experience outcomes comparable to native four-year enrollees.

In American society, the widely accepted rhetoric is that education is the key to success: Individuals can achieve anything, even the American Dream, if they try hard enough and pursue an education. This mantra persists despite vast, though outdated, empirical research that exposed unyielding stratification in higher education (Posselt et al., 2012). Mayes (1977) points to the danger of the individualized rhetoric, noting: "The political importance of 'equality of educational opportunity' is that it allows individuals rather than the society to be responsible for their failing to succeed within the educational hierarchy" (p. 22). Decades of policies aimed at resolving differences in access to and opportunity within education seem to have done little to lessen stratification in education and the broader society. It may be that society has put too much hope on individual agencies like the community college to solve the problem of stratification, when larger social and structural forces also contribute to this issue. The theories cited in this paper and a call for updated empirical research on the topic seek to direct attention to the community college transfer option to illuminate what changes in a stratified educational system, if any, could be realized through expanding access to the four-year institution via the community college transfer function.

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ARTICLE TWO: A STUDY OF STRATIFICATION IN POSTSECONDARY EDUCATION: DEMOGRAPHIC PATTERNS IN THE POSTSECONDARY ENROLLMENT OF BACHELOR'S DEGREE ASPIRANTS

No one could deny the inequalities of wealth and power in the United States. But what made these inequalities tolerable, perhaps, was that everyone – or so the national ideology claimed – had a chance to advance as far as his ability and ambition would take him... The result of this interplay of popular demand and elite response was the creation of a huge but highly differentiated educational system, with unequaled numbers of students enrolled in it. (Brint & Karabel, 1989, p. 9)

In America, the prevailing rhetoric is that postsecondary education provides the opportunity for social mobility. Yet stratification in postsecondary education exists in many forms, which inhibits a guaranteed connection between increased education and upward social mobility. Stratification manifests itself in the unequal structure of postsecondary education as well as in the imbalanced social and financial returns to education. An issue with this imbalance is that the education system is stratified by a variety of demographic factors, with the more privileged having greater access to educational experiences that offer higher returns. Policymakers have attempted to reduce this stratification in postsecondary education by expanding access to education through policies related to financial aid and college pipeline programs and by funding expanded pathways to the baccalaureate, such as the community college transfer pathway. Though these efforts are laudable attempts to reduce the stratified nature of four-year institutions, the proposals which expand access to the community college to meet this goal

create robust debate in education policy circles. The current popularity of tuition-free community college proposals (The White House, 2015) and dated extant research on transfer reawaken this debate.

Policy changes that have affected higher education over the past 25 years are vast. The reductions in federal and state funding of higher education (Mullin, 2010) and changes in student financing options through the Education (Student Loans) Act of 1998 have altered how students engage with higher education from a financial perspective, especially in terms of debt accumulation. Additionally, various changes to the K-12 curriculum, like No Child Left Behind, and the Higher Education Reauthorization Act of 2008 have, respectively, altered student preparation for college and theoretically increased access to information on postsecondary outcomes and statistics. Beyond policy, the composition of educational consumers has changed over the past few decades, with the Hispanic population more than doubling in size from 1980 to 2000 (Hobbs & Stoops, 2002). These policies and changes together have resulted in transformations to how the public views and interacts with higher education.

To update this research, this paper uses recent longitudinal data to examine if the community college transfer pathway provides a route for minority and low-socioeconomic status (SES) students to attend four-year colleges and universities and thus reduce enduring patterns of stratification in these schools. Finding a route to the four-year institution is important because racial/ethnic minority and low-income students are less likely to attend these institutions (Ma et al., 2016) and because non-profit, public and private four-year institutions tend to yield the

highest monetary rewards of the postsecondary sector (Jaeger & Page, 1996; James, 2011). Although the community college serves many vital functions in the world of postsecondary education, including providing vocational, continuing, and community education, the focus of this paper is on the effectiveness of the transfer function. The following sections briefly examine the role of the community college on the postsecondary landscape, stratification theories related to postsecondary education, and the extant literature related to the impact of community colleges in the pathway to four-year institutions. The remaining sections include an analysis of data from the Educational Longitudinal Study of 2002 (ELS:2002), the most recent national, longitudinal study on postsecondary education, to assess whether the community college transfer function might help reduce the stratified enrollment patterns in four-year institutions.

COMMUNITY COLLEGES & POLICY

Community colleges are uniquely situated in the postsecondary education market because they possess low- to non-existent admissions requirements and offer education at low cost compared to four-year colleges and universities. They are, in essence, open door colleges (Clark, 1960). Additionally, community colleges make up nearly one third of all postsecondary institutions and serve almost 40% of America's postsecondary enrollees, many of whom are low-income, racial and ethnic minorities, and non-traditional students (NCES, 2015). The role of the community college in this stratified education system is complex in that it reflects the conflicting notions of democratic equality, social efficiency, and social mobility (Labaree, 1997): Americans seem to expect, or at least hope, that community colleges simultaneously

expand the postsecondary playing field, train workers for a demanding employment market, and create upward socioeconomic opportunity. As a result, these institutions must provide community, remedial, vocational, and four-year preparatory education, which some researchers believe makes them ill-equipped to prepare degree-seeking low-income and minority students for a four-year institution, a task that requires significant focus and effort (Baime & Baum, 2016; Dowd et al., 2008). The conflicting missions and market-assigned roles of community colleges have impacted their perceived status as being among the lower rungs of the stratified postsecondary sector. Despite this less prestigious designation, the transfer function to four-year institutions has continued to be a component of community colleges and gives the impression that a low-cost gateway to the baccalaureate exists, one that is accessible to anyone.

As noted previously, the transfer function is what theoretically serves to open access to four-year institutions. Many researchers and policymakers support it for this reason. As Dougherty and Kienzl (2006) note: “[A]dvocates, scholars, and policy makers concerned about issues of social stratification have highlighted the importance of transfer, noting that minority and working-class students are increasingly relying on community colleges for access to the baccalaureate” (p. 453). However, research is divided on whether low-income and minority students actually transfer and obtain bachelor degrees. Research shows that although the majority of students who enroll in community college are low-income or minority, they are not necessarily the population of students who transfer to four-year institutions (Melguizo et al., 2011). Researchers Wassmer, Moore, and Schulock

(2004) found “...racial/ethnic disparities in transfer success even among students most likely to transfer, and after accounting for academic preparation and socioeconomic status” (p. 669). This finding is concerning in that racial disparities persist in transfer patterns, even after other demographic controls are accounted for in studies.

Efforts by state and federal governments to expand access to the community college, and higher education generally, are not solely about attempts to create the opportunity for social mobility and reduce stratification in postsecondary education. Historically, policymakers have demonstrated an interest in skill development amongst the nation’s population as a means to improve America’s economy, industrial sector, and technological capabilities (Labaree, 1997). Also called the social efficiency role of education, the use of education to develop skills suited for the labor market was particularly popular in the early 20th century. It was not until the 1960s and 1970s that policymakers started to rely on education as a mechanism to combat poverty and racial inequalities (Kantor & Lowe, 1995). However, this social efficiency goal of preparing workers for labor often runs counter to the other frequently cited purposes of education: the development of social mobility opportunities and the reduction of socioeconomic stratification. In other words, to prepare workers for a stratified labor market, the education system will be likewise stratified. While stratified systems of education (i.e. vocational programs, baccalaureate programs) are not inherently problematic, and in today’s society people are often sorted into these levels of education, particularly by race, sex, class, and other demographic characteristics (Labaree, 1997). It is challenging, therefore,

to expect the community college and its transfer function to reduce stratification in four-year institutions when the inputs and outputs which impact postsecondary education are highly stratified. Despite this challenge, policymakers continue to propose policies aimed at the community college, which is, in part, why the relationship between stratification and the community college deserves additional attention.

THEORETICAL ORIENTATION

As previously noted, stratification exists in many forms in postsecondary education. From degree types to institutional selectivity, the various types of education one can receive and the financial and social returns to them are varied (Ma et al., 2016). A critical issue of stratification is understanding how people are allocated to certain degrees and institutions by demographics like class, race, and gender and experience different social returns as a result of their enrollment (Bobbitt-Zeher, 2007; Lee & Burkam, 2002; Ma et al., 2016). Bourdieu and other conflict theorists purport that conflict between the classes is what keeps this stratification present in education and this argument illuminates some of the patterns in enrollment seen throughout the expansion of postsecondary education (Bourdieu and Passeron, 1977; Loyal, 2019). Conflict theory purports that status groups struggle for advantage and use education to perpetuate status and maintain group control (Collins, 1971). In this view, when access to higher education increases among low socioeconomic status individuals, high socioeconomic status individuals find ways to retain their advantage in the educational marketplace. In essence, "...education becomes a defensive expenditure necessary to protect one's

‘market share’” (Thurow, 1975, p. 97). This fight for individual success is how conflict theory operates in a capitalist society, where individual freedoms surpass collective good (Labaree, 1997).

The result of this individual freedom, according to conflict theory, is that efforts of high socioeconomic status individuals to keep themselves above the masses make educational credentials quantitatively similar but qualitatively different (Lucas, 2001): Degree types, institutional selectivity, and for-profit/non-profit institutions all reflect perceived differences in educational quality, which result in varying social and economic returns (Gerber & Cheung, 2008). Moreover, typically those with the least means end up in the tiers of education with the lowest economic return, like for-profit institutions and community colleges (Denice, 2015; Gerber & Cheung, 2008). Lucas (2001), in his theory of effectively maintained inequality, noted that community colleges give the illusion that postsecondary opportunities have been expanded yet keep the top tier of postsecondary education (i.e. non-profit four-year institutions, those with the highest monetary return to postsecondary education) out of reach for most. The stratification we can see plainly in postsecondary enrollment patterns and higher education broadly aligns with the ideals of conflict theory, especially the idea that status groups use education to cultivate and maintain power.

While this paper uses conflict theory as a lens to view the issue of stratification and the community college solution to it, there are other theories that researchers have used to examine these same topics. Functionalist theory is perhaps the second most discussed theory used in discussions of stratification. This theory

posits that tight coupling exists between the educational system and the labor market, with education acting as a responsive mechanism to meet the skill demands of the labor economy. Functionalism is useful in that it examines the functions of education yet its reliance on merit and necessary function to explain educational stratification is not an ideal supported by contemporary research. Therefore, its utility in this analysis is limited.

Conflict and functionalist theories are broadly known as prominent sociological theories, but credentialing theory is another approach many researchers have taken to examine stratification. Credentialing theory, which is similar to conflict theory, deals with the use of credentials by the powerful as a tool for social reproduction via the labor market. Though this paper does not offer an analysis of stratification from credentialing theory because of its labor market focus, it would be a useful theory to use to examine the impact of community college attendance on post-bachelor's degree attainment.

If the analysis from this paper finds transfer student demographics to be statistically significantly different from native students (original four-year institution enrollees) then the community college is challenging traditional postsecondary stratification by expanding the pathway to the four-year institution for low-SES and minority students. However, as noted previously, many researchers have questioned the community college's ability to challenge the status quo and posit that community colleges are simply a mechanism to perpetuate stratification, not alleviate it. The following literature review examines the extant literature on the transfer pathway to determine if there is consensus on who attends community

colleges and, of those, who transfers to a four-year institution. This analysis will inform this paper's presumption that community colleges are doing little to alleviate patterns of stratification in four-year institutions. It also provides support and rationale for the variables selected for this analysis of the transfer pathway.

REVIEW OF THE LITERATURE

Community colleges offer, among other types of valuable education, remedial courses, vocational certificates, associate's degrees, and, for some, a pathway to the bachelor's degree. Because community college enrollees are more likely to be racial minorities, have lower levels of academic preparation, and come from lower socioeconomic backgrounds than students who enroll in four-year institutions (Bailey et al., 2003; Ellwood & Kane, 2000; Lee & Frank, 1990; Wassmer, Moore, & Shulock, 2004; Whitaker & Pascarella, 1994), it is important to understand if the critical transfer function is open to them since they are already unlikely to enroll directly in four-year institutions. The literature reviewed in this section provides an overview of the stratified enrollment patterns in postsecondary education in the United States. Specifically, this section examines who enrolls in community college and who transfers from community colleges to pursue a bachelor's degree. National studies are primarily used to paint a generalizable portrait of the transfer student pathway. This section also examines the use of variables as controls in extant research throughout the review to substantiate the selection of control variables included in the analyses conducted for this paper.

WHO GOES TO A COMMUNITY COLLEGE?

As previously noted, research on who goes to community college is relatively concrete and uncontested: Community colleges enroll slightly less than half of the nation's college-going population and, when compared to four-year institutions, the enrollees are more likely to be racial minorities, low-income, and/or have lower levels of academic preparation (Bailey et al., 2003; Ellwood & Kane, 2000; Lee & Frank, 1990; Wassmer et al., 2004; Whitaker & Pascarella, 1994). Even when low-SES students had strong academic and college preparation resources in high school, they were still most likely to take a path to the two-year institution over a four-year institution (Cabrera et al., 2005). Such themes of community college student enrollment have persisted through the decades. Looking at national data from the 1970s, 1980s, and early 1990s, Alon (2009) found little change in stratification patterns by socioeconomic status and institution type. The analysis in this paper will confirm if this pattern persists into the 2000s.

Research from the American Association of Community Colleges demonstrates that enrollment patterns within community colleges vary by state, though state demographic trends are still relatively similar to national trends. Enrollment overall depends significantly on factors like state-level financial aid policies, transfer and articulation policies, state funding, cost of attendance, and the number of institutions in the state (American Association of Community Colleges, 2019). Tennessee is an example of a state with a College Promise program – that is, a program with no tuition or fees at two-year institutions, which is similar to some current national policy proposals (The White House, 2015). Tennessee saw a 28%

rise in community college enrollment after implementing this policy (American Association of Community Colleges, 2019), though data are still unclear about the effect of transfer rates post-implementation. State policies and support related to community colleges, AACC's research shows, are without a doubt tied to two-year college enrollment numbers, but not necessarily transfer rates.

AACC also tracks enrollment patterns in the community college over time. Recently, research from AACC indicates that in the past decade, students of color make up the majority of community college enrollees, primarily due to the significant rise in Hispanic attendance at community colleges (2019). When broken down by race as a percentage of the population, community college enrollees have consistently been more likely to be a minority race when compared to enrollees in four-year institutions.

In a clear demonstration of stratification in postsecondary education, prior studies reveal that students who enroll in community college have significantly different background characteristics than students who enroll in four-year institutions. With patterns of enrollment stratified in this manner, it would be logical to assume that the transfer mechanism would provide a transfer pathway for minority and low-income students who are interested in obtaining a bachelor's degree. However, research is not clear when it comes to understanding who transfers.

WHO TRANSFERS FROM COMMUNITY COLLEGE TO A BACCALAUREATE-GRANTING INSTITUTION?

Many of the studies reviewed for this paper show that a significant proportion of community college enrollees intend to transfer to a four-year institution to obtain a bachelor's degree. However, the reality of who transfers looks much different than the typical population of community college entrants who intend to obtain a bachelor's degree. Monaghan and Attewell (2015), using Beginning Postsecondary Students Longitudinal Study (BPS: 90) data from 2004, found that only 42% of baccalaureate-aspiring students who attended community college and indicated a desire to transfer actually do so. Alfonso (2006), examining National Education Longitudinal Study of the 8th Grade (NELS: 88) data, found that while 56% of community college enrollees expected to obtain a bachelor's degree, only 37% of them managed to transfer. Historically, very few students who show an interest in transfer actually complete the transfer process (Hoachlander et al., 2003; Melguizo et al., 2011).

Intent to transfer or obtain a bachelor's degree is important to explore in an analysis of postsecondary pathways. If research shows that a diverse group of students intends to transfer but a less diverse group actually does, this gap may indicate an issue within the community college structure that inhibits transfer or a barrier to entry in the four-year sector. However, using expectations as a variable in an analysis of transfer pathways is a prime example of a methodological approach with widely different results and not a variable always included by researchers. For example, Rouse's (1995) study, which did not use intent as a variable, found that

community colleges had a negligible effect on bachelor's degree attainment because the students who did not transfer "...probably would not have finished a bachelor's degree anyway" (p. 223). Conversely, intention was a cornerstone of Leigh and Gill's 2001 research, where their purpose was to re-test Rouse's 1995 work by adding student intent in their analysis (i.e., including only students who hope to obtain a baccalaureate degree in the study to see if the results varied). Leigh and Gill's updated research found a correlation between intent and likelihood of transfer and found that intent to complete a bachelor's degree had "...a strong, positive effect on actual years of schooling completed" (p. 27). The analysis for this paper uses intent as a variable due to this correlation. Including this variable will provide a more accurate representation of transfer rates and remove from the analysis students who attend community college for other certificate or vocational programs offered by the institution.

In their analyses, many scholars have included a variety of variables in addition to or in place of intention to explore transfer patterns. For example, Rouse (1995) used a city's employment rate, parents' education, family income, home ownership, SES, gender, race, cost of tuition, and the distance of postsecondary institutions from the student's home high school. The last of these variables is one not seen across many of the studies in this review. Here, Rouse attempted to update a proximity theory posited by Anderson, Bowman, and Tinto (1972); Rouse argued that the "...farther the nearest two-year and four-year colleges, the less likely it is that an individual will attend college" (p. 219), meaning that proximity to an institution of higher education increases the likelihood of attendance. However,

researchers debate whether distance and a variety of other variables previously mentioned actually create a better analysis of the transfer rate. Distance is therefore not included in the analysis for this study because not only is the data not part of the ELS:2002 dataset, it demonstrates limited validity in the research community.

One additional control variable frequently used by stratification and transfer pathway researchers is high school GPA. Researchers use high school GPA as a control variable because it is an indicator of academic achievement and measure of likelihood of baccalaureate attainment (Wang, 2009). As other researchers have noted: “The superiority of high school grade point average in predicting long-term college outcomes is consistently evident across all academic disciplines, campuses and freshman cohorts” (Geiser & Santelices, 2007, pp. 26–27). Additionally, research indicates that a high school GPA of 3.01 or higher acts as a positive predictor for college success (Geiser & Santelices, 2007; Hein et al., 2013; Noble & Sawyer, 2002), which further argues for the importance of this variable. For these reasons, high school GPA is used as a baseline control variable in the analyses of data for this paper.

Beyond variable selection, researchers approach the examination of transfer rates from community colleges to four-year institutions in many ways. Prior research falls into three main categories of examining transfer: who among community college enrollees is likely to transfer; whether those who transfer look any different from the original enrollees in four-year institutions; and whether those who transfer look any different from the rising juniors (students who have completed two years of school) at four-year institutions. These approaches to

understanding transfer, when viewed together, are helpful in that they reveal transfer patterns and where in the process students may be leaving the transfer pipeline. The remainder of this section examines transfer students from those three perspectives.

Overall, disparities exist between the general demographic makeup of the enrollees in community college and those who transfer. When compared to their community college peers, the students who actually transfer tend to be from higher SES families and are less often racial minorities (Wassmer et al., 2004). Dougherty and Kienzl (2006) utilized NELS88 and BPS:90 data to determine the impact of socioeconomic status, over several decades, on the likelihood of transfer among community college attendees. Their findings are similar to Wassmer et al.'s in that they found the likelihood of transfer to be strongly associated with parental SES. They discovered a gap in transfer rates of 45% between the top and bottom 10% socioeconomic groups. However, they did not find race and ethnicity to have a statistically significant impact on transfer rates in the 1990s (unlike the data from the 1970s and 1980s).

Research over the past several decades indicates that low-SES students have consistently been the population least likely to transfer to four-year schools (Dowd et al., 2008; Dowd & Melguizo, 2008). Data from both High School & Beyond 1980 (HS&B: 1980) and NELS88/2000 show that, similar to the populations that originally enroll in four-year institutions, "...transfer students from the highest-SES quintile and upper-middle quintile are overrepresented" when compared to the community college population (Dowd & Melguizo, 2008, p. 387). This socioeconomic

gap would indicate that community colleges are not expanding access to four-year institutions for low-income and minority students.

Some researchers compared transfer students to both their community college peers and initial four-year college enrollees. Using HS&B: 1980, Lee and Frank (1990) found that the transfer student population was not all that different from the initial four-year enrollees in terms of socioeconomic makeup but was of higher socioeconomic status than their community college peers. Specifically, they found:

The students who transferred to four-year colleges were of a higher social class, less likely to be minority, and less likely to be female [when compared to the larger community college population]. In fact, the socioeconomic status (SES) of the transferees closely resembled the average social class of those students who originally enrolled in four-year colleges. (Lee & Frank, 1990, p. 184)

Lee, Mackie-Lewis, and Marks (1993) found similar patterns of enrollment when analyzing the HS&B data.

The research identified in this review has somewhat consistently indicated that transfer students are more advantaged than their non-transferring community college peers, yet, in terms of SES, the research reports conflicting results when comparing community college transfers to their native four-year peers. The findings may be contradictory due to differences in inclusion parameters and variables set by the researchers, as previously mentioned. This paper uses research-supported variables, including those identified in this section, to update the research on

community college student transfer and determine the potential impact of the community college transfer function on reducing the stratified racial and socioeconomic enrollment patterns in four-year institutions.

DATA AND METHODS

Although community colleges enroll students in all stages of life and serve broad, diverse purposes in their communities, the intent of this paper is to analyze the demographic differences between community college transfer students and native enrollees to discern if the community college has the ability to diversify the stratified attendance patterns at four-year institutions by creating a pathway to the baccalaureate for students less likely to obtain one. To determine the transfer mechanism's effect, this study examines community college attendance and transfer patterns. More specifically, when controlling for high school GPA, demographics, and intent to obtain a bachelor's degree, this analysis examines if the students who first attend community college are demographically different from native four-year enrollees both at initial postsecondary enrollment and at the point of transfer from community college.

To address these questions, I used the dataset from the Education Longitudinal Study of 2002 (ELS:2002), a nationally representative longitudinal study of students during their secondary and postsecondary experiences. Researchers collected data from students, their parents/guardians, math and English teachers, and school administrators. Starting with 10th graders in 2002, the survey was re-administered in 2004, 2006, and 2012. In 2005 and 2013 school transcripts were also collected. The intent of ELS:2002 was to track the patterns of

college access and persistence of students from high school through their post-secondary and/or labor market experiences.

I selected the variables used in these analyses for their theoretical connection to the variables of interest. However, it is worth noting that the variable names used by NCES may be considered problematic or offensive, especially those related to the designation of “Hispanic” as a race and “sex” as binary. In this paper, I used the variable names as defined by NCES with the intent of being true to the data, but understand the complexities inherent in these designations.

Due to their correlation to postsecondary outcomes, I selected high school GPA, demographics (used when not the focus of the question), and degree expectations as control variables for each of the questions. The demographic variables of interest in these questions are family socioeconomic status (SES), race, sex, and first-generation status. I selected these variables due to the tendency of these personal characteristics to be stratified within the educational system (see literature review for control variable and demographic research).

The data were collected, cleaned, and imputed, where needed, by the National Center for Education Statistics (NCES). Using theoretical underpinnings to guide my modifications, I adjusted several of the variables to binary or categorical variables to prepare the data for analysis. For example, in the “family SES” variable I used NCES’s composite score of combined parent socioeconomic status to create SES quartiles as categorical variables based on the adjusted population sample size of postsecondary enrollees when calculated through the complex samples analysis

process. The quartiles allow for easier interpretation of the findings rather than the relatively uninformed socioeconomic status composite score.

Finally, the last two variables I modified were race and GPA. I modified student race from the original dataset due to low levels of respondents who identified as “American Indian/Alaska Native,” “non-Hispanic, Asian, Hawaii/Pac. Islander, non-Hispanic,” and “more than one race, non-Hispanic.” These three categories were combined into one category labeled “other.” I also collapsed the “Hispanic, no race specified” and “Hispanic, race specified” categories into one “Hispanic” category due to response rates within these categories. In terms of GPA, I did not vastly modify the existing groupings created by NCES. For example, I combined categories below 2.0 due to the low volume of respondents with GPAs below this threshold but categories 3.0 and above remained consistent with NCES groupings. The final GPA categories are 0.0-2.0, 2.01-3.0, and 3.01-3.50, and 3.51-4.0.

The ELS:2002 data spanned multiple years and is considered a complex sample due to unequal selection probabilities, stratification within the sample, and clustering. That is, the selection of individuals within the sample are not independent of one another, as they would be in a simple random survey. Concerns with complex survey data include the sample not being representative of the larger population and the existence of bias within the estimation of population variances and standard errors. To account for this sample, I employed a complex samples design to analyze the data using logistic regression in SPSS. I used the combination of a strata variable, a cluster variable (primary sampling units), and a sample weight

variable to create the data analysis plan modeled in the logistic regression. The weight variable I selected comes from the NCES ELS:2002 dataset and was weighted to model the surveys and transcript data used for the analysis (1st follow-up, 3rd follow-up, and high school transcripts). The number of postsecondary enrollees reduced the available sample from 16,197 to 7,562 respondents. The adjusted population of postsecondary enrollees, using a complex samples analysis, was $n=1,941,770.879$. Missing data in this study was in large part the result of filtering out students who did not enroll in postsecondary education from the original high school students surveyed.

Although there are some assumptions and limitations associated with logistic regression, using the complex samples plan addresses a portion of those, as noted above. I performed one additional check to test for multicollinearity among the independent variables using Variable Inflation Factors (VIF). I found that all variables tested were considered within acceptable levels of collinearity, having VIF collinearity statistics well below 5 (VIF statistics ranged from 1.046 to 1.248). I ran each question without control variables before adding them in. Each addition of a variable in the final analysis resulted in a significant increase in the pseudo r-square scores, indicating a good fit for each model.

For question one, I performed a complex samples logistic regression to assess the difference in the demographics of students who first attended a two-year institution in their postsecondary experience and those who attended a four-year institution first. The dependent variable was "Institution Type First Attended" (two-year (1) and four-year (0)). The subpopulation I used in the analysis included those

students who indicated on the base year survey their expectation of obtaining a bachelor's degree or higher. The model contained five theory-based independent variables: family SES, first-generation status, student race, high school GPA, and level of first postsecondary institution attendance.

In the second analysis, I performed the same complex samples logistic regression and included the use of the same subpopulation and independent variables as were used in question one. Different in the second analysis was the dependent variable, "CC Transfer Student indicator" (community college transfer student (1) and native 4-year student (0)). These differences are intended to discern the difference between the demographics of community college entrants and those who actually transfer.

TABLE 1: VARIABLES SELECTED AND CODED FROM EDUCATIONAL LONGITUDINAL STUDY OF 2002 (ELS: 2002)

Indicator	Used As	Variable Definition/ Name	Data	Data Source
Degree Expectations / Intent	Control/Predictor – Bachelor’s or Higher (1) & Less than Bachelor’s (0)	Bachelor’s Degree Expected by Student in Senior Year	Composite score of highest level of ed. respondent expects to complete*	First follow-up student survey (Spring of 12 th grade)
High School GPA	Control/Predictor – Below 2.00 HS GPA 2.01-3.00 HS GPA 3.01-3.50 HS GPA 3.51-4.00 HS GPA	High School GPA	4.0 scale of cumulative high school GPA	High School Transcripts
First Generation	Control/Predictor – Parent w/ no BA (1) & Parent w/ BA or Higher (0)	First generation to obtain a Bachelor’s Degree or higher	Composite score of highest level of education achieved of either parent*	First follow-up, Comb. of parent & student survey
Family SES Quartile (F1)	Control/Predictor – SES quartile: Lowest quartile (1), Second quartile (2), Third quartile (3), Highest quartile (4)	Family SES	Composite score of combined parent SES*	First follow-up survey
Sex [^]	Control/predictor – Female (1) & Male (0)	Female Respondent	Sex of student*	First follow-up survey
Level of First Postsecondary College Experience	Predictor – Two-year institution (1) & Four-year institution (0)	Institution Type First Attended	Indicator of whether student’s first post-secondary institution was a community college (CC)	Third follow-up (final survey)
Student Race [^]	Control/Predictor – White (1), Black/African American (2), Hispanic(3), Other (4)	Collapsed Race Categories	Student race and ethnicity self-report data*	First follow-up student and parent survey
Community College Transfer Student Indicator	Predictor – CC Transfer Student (1) & Native 4-year (0)	CC transfer to 4-year Indicator	Identified using first-attended data (2-year) and last or current attended (4-year)	Data from Third follow-up (final survey)

*Missing data left blank or imputed by NCES where statistically appropriate

[^]The author acknowledges that these categories may be problematic but used them as coded by NCES

RESULTS

QUESTION 1

Question one examined whether, when controlling for high school GPA, demographics, and intent to obtain a bachelor's degree, community college enrollees look similar to native four-year enrollees in terms of family SES, race, sex, and first-generation status. Using a complex samples logistic regression, I applied four independent variables of interest on the dependent variable, "institution type first attended": race, sex, first-generation status, and family SES. The model was statistically significant with an unweighted 7,562 respondents included ($n=7,562$, $df=11$) based on the subpopulation of students who intended to obtain a bachelor's degree. All of the independent variables are statistically significant in the model at $p<.01$.

Overall, the model (Table 2) shows that differences exist in the demographics of those who first attend community college as compared to those who first attend a four-year institution. Each variable subset uses a reference variable to compare to the other variables in the model (e.g. "female" is noted in the table and "male" is the reference or comparison variable). The findings are presented in an odds ratio format, with a result greater than one demonstrating a positive relationship between variables and a result below one demonstrating a negative relationship between variables. For example, in terms of race, Black and African American students have .504 lower odds, or are half as likely, to be community college students as compared to White students (95% CI .393, .647). American Indian, Alaskan Native, Asian, and Pacific Islander students ("Other") show no statistically

significant difference between their odds of being a two-year vs. four-year college entrant (95% CI .612, 1.018). However, Hispanic students have odds 1.6 times higher of being a two-year entrant as compared to White students (95% CI 1.210, 2.120).

Findings from the analysis also show a slight statistically significant difference in enrollment patterns by sex between initial levels of entrance. Females have 28.8% higher odds of first attending a two-year institution over a four-year institution (95% CI 1.117, 1.486). Parental education also presents a statistically significant result, showing that students who do not have a parent with a bachelor's degree (first-generation) have 36.6% higher odds of first attending a two-year institution over a four-year institution, despite having the intent to obtain a bachelor's degree (95% CI 1.136, 1.641).

In terms of family socioeconomic status (SES), as collected during the first follow-up survey, SES is set in quartiles. As compared to the highest SES quartile, the lowest SES quartile students have three times higher odds of attending a community college over a four-year institution right out of high school (95%, 2.906, CI 2.195, 3.847). Similarly, the second and third SES quartiles of students have approximately double the odds of attending a community college over a four-year institution as compared to those in the highest SES quartile (95% CIs 1.637, 2.801 & 1.550, 2.411, respectively).

These findings collectively indicate a likelihood that students attending two-year school as their first postsecondary institution differ by race, first-generation status, sex, and SES from those who first attend a four-year school. Overall, students

are more likely to attend a two-year institution if they identify as female, first-generation, Hispanic, and are in the lowest, second, or third family SES quartile.

TABLE 2: DEMOGRAPHIC DIFFERENCES BETWEEN COMMUNITY COLLEGE ENTRANTS AND NATIVE FOUR-YEAR ENTRANTS

(n= 7,562 unweighted; 1,941,770.879 weighted)

Variables	Sig.	Odds Ratio (95% CI)
Model	.000	--
Intercept	.000	--
Race^	.000	
Black/African American		.504 (.393, .647)
Hispanic		1.601 (1.210, 2.120)
Other		.789 (.612, 1.018)
Sex^	.001	
Female		1.28 (1.117, 1.486)
Parent Education	.001	
First Gen		1.366 (1.136, 1.641)
Family SES Quartile	.000	
Lowest Quartile		2.906 (2.195, 3.846)
Second Quartile		2.141 (1.637, 2.801)
Third Quartile		1.933 (1.550, 2.411)
Prior Academic Achievement		
High School GPA	.000	--

Subpopulation: Degree Intent = Bachelor's or Higher

Dependent Variable: Level of First Postsecondary College Experience (reference category = Native 4-Year Enrollee)

Model: (Intercept), FamilySES, HSGPA, Sex, FirstGen, Race

Reference categories: Race: White; Sex: Male; Parent Ed: Non first gen; Family SES Quartile: Highest

^The author acknowledges that these categories may be problematic but used them as coded by NCES

QUESTION 2

Question two examined whether, when controlling for high school GPA, demographics, and intent to obtain a bachelor's degree, community college transfer students at their point of transfer look different from native four-year enrollees in terms of family SES, race, sex, and first-generation status. I again used a complex samples logistic regression, where I applied four independent variables of interest on the dependent variable, "CC Transfer Student Indicator": student race, sex, first-generation status, and family SES. The model was statistically significant with 6,505

respondents included ($n=6,505$, $df=11$) based on the subpopulation of students who expected to obtain a bachelor's degree. All of the independent variables are statistically significant in the model at $p<.01$, with the exception of sex, which is statistically significant at $p<.05$. First-generation status was not significant in this model.

Although the variables shown in Table 3 are significant overall, upon further investigation the confidence intervals of several individual independent variables cross one, which indicates that specific variables within the group are not statistically significant. This means that there is no statistically significant difference between certain demographic characteristics of the transfer and non-transfer groups studied, as noted below.

In terms of family SES, I set the group of interest as family SES in the highest quartile. Students who are in any SES quartile outside of the highest are more likely to be a community college transfer student over a native four-year enrollee. Students in the second and third SES quartiles have over 60% higher odds of being a transfer student over a native student compared to students in the highest SES quartile (95% CI 1.209, 2.352 & CI 1.269, 2.168 respectively). Additionally, students in the lowest SES quartile have odds twice as high as the highest SES quartile to be a community college student, despite similar intent to obtain a degree and other control variables (95% CI 1.522, 3.104).

Results associated with race demonstrate mixed significance. Black students are 43.1% less likely to a transfer student rather than a four-year native student as compared to White students (CI 95% .410, .790). On the other hand, Hispanic and

American Indian, Alaskan Native, Asian, and Pacific Islander (“other”) students show no statistically significant difference from White students in terms of being a transfer or native student (95% CI .895, 1.819 & CI .611 and 1.063 respectively).

The other variable that is statistically significant is sex: Female students have 28% higher odds of being a community college transfer student over a native four-year student as compared to males (95% CI 1.053, 1.556). As mentioned previously, there is no statistically significant difference between community college transfer and native students in terms of first-generation status. In other words, the community college is not transferring more first-generation students to four-year institutions than are already natively enrolled when controlling for other demographics.

These findings collectively indicate differences in family SES and sex for students who transfer from a community college to a four-year institution as compared to native four-year students. While some racial differences exist, they were with mixed statistical significance. Most significant is that Black and African American students are less likely to be community college transfer students compared to their White peers.

TABLE 3: DEMOGRAPHIC DIFFERENCES BETWEEN COMMUNITY COLLEGE TRANSFER STUDENTS AND NATIVE FOUR-YEAR STUDENTS
(n= 6,505 unweighted; 1,612,203.142 weighted)

Variables	Sig.	Odds Ratio (95% CI)
Model	.000	--
Intercept	.000	--
Race [^]	.001	
Black/African American		.569 (.410, .790)
Hispanic		1.276 (.895, 1.819)
Other		.806 (.611, 1.063)
Sex [^]	.013	
Female		1.280 (1.053, 1.556)
Parent Education	.221	
First Gen		1.152 (.918, 1.445)
Family SES Quartile	.000	
Lowest Quartile		2.174 (1.522, 3.104)
Second Quartile		1.687 (1.209, 2.352)
Third Quartile		1.659 (1.269, 2.168)
Prior Academic Achievement		
High School GPA	.000	--

Subpopulation: Degree Intent = Bachelor's or Higher

Dependent Variable: CC Transfer Student Indicator (reference category = Native 4-Year Enrollee)

Model: (Intercept), FamilySES, HSGPA, Sex, FirstGen, Race

Reference categories: Race: White; Sex: Male; Parent Ed: Non first gen; Family SES Quartile: Highest

[^]The author acknowledges that these categories may be problematic but used them as coded by NCES

DISCUSSION AND CONCLUSION

Educators, sociologists, and economists often examine stratification in education in an effort to determine if education is simply reproducing social and economic inequalities or helping to alleviate them. At the heart of what this analysis sought to examine is the question of whether the community college and its transfer function can serve as a mechanism that reduces stratification in four-year institutions by providing a pathway to the bachelor's degree for those who are least likely to attend four-year institutions due to racial or socioeconomic barriers. If the community college is indeed diversifying the demographic patterns of enrollment at

four-year institutions because of its transfer function, it has the potential to be a mechanism for reducing a portion of the stratification in postsecondary education.

The initial analysis of which students, by demographic characteristics, tend to enroll in a community college versus a four-year institution generally supports the literature reviewed previously. Women and first-generation students have higher odds of attending a two-year institution. However, an unexpected finding is that Black and African American students have lower odds of attending a two-year college as compared to White students, whereas Hispanic students have higher odds than White students to attend a two-year institution. In terms of income, students who reside in the lowest, second, and third family SES quartiles have significantly greater odds of attending a two-year institution first as opposed to a community college as compared to the students in families in the highest SES quartile. Overall, community college students tend to be Hispanic, female, below the highest SES quartile, and first-generation.

Based on the analysis of ELS:2002 data, 34.6% of students who attend a community college and intend to get a bachelor's degree actually transfer to a four-year institution, a number that is relatively stable over the past few decades. This stable transfer rate may be in part due to the fact that students who wish to transfer still face significant barriers in navigating the four-year application processes like paying application fees, completing standardized tests, and navigating credit transfer, among other issues (Goldrick-Rab, 2010; Wang, 2009). The transfer rate found in this study, and found in prior studies, demonstrates that transfer could be a significant or insurmountable barrier for students who wish to obtain a bachelor's

degree but first attend a community college. The rate of transfer for students with transfer intent indicates that the conflict theory orientation to this research has merit: This research shows community college students' progression down the transfer pathway is stunted and the bulk of these students do not reach the four-year institution.

For the 34.6% of students who transfer, community colleges do not appear to enhance the racial diversity of the four-year institution. I found no statistically significant difference between transfer and native students who were White, Hispanic, or American Indian, Alaskan Native, Asian, and Pacific Islander ("other"). In fact, when controlling for other demographic factors, the analysis suggests that Black/African American students are actually less likely than White students to transfer. However, I found higher odds of females (slightly at 28%) to transfer rather than enter four-year institutions via traditional four-year enrollment. In terms of family SES, results demonstrate that the community college transfer pathway was more likely to be taken by students in the lowest, second, and third quartiles. These findings indicate that while the community college transfer function does not change the racial enrollment patterns in four-year institutions, the community college does provide a pathway for lower-SES and female-identified students.

In sum, transfer demographics are different from the original enrollees at a two-year institution, even when controlling for degree intent and other variables. Those same transfer students show some statistically significant differences between their demographics and those of native (four-year) students, most notably

in sex and in SES quartiles. However, the transfer function does not seem to be increasing diversity in totality, especially for certain minority groups like Black and African Americans and Hispanic students. Unfortunately, only 18.6% of four-year attendees in the study are community college transfer students, so even in the areas where community colleges increase diversity at four-year institutions, the impact on stratification patterns is relatively small. Additional research on the outcomes of transfer students, especially graduation rates and time to completion, would be helpful to grant a more comprehensive view of this degree pathway.

These statistics are not surprising considering similar trends found in prior studies from the past four decades. Vast amounts of research indicate that it is difficult for students to remain enrolled and engaged at the community college and even more difficult for them to remain on the baccalaureate path (Dougherty, 1992; Schudde & Goldrick-Rab, 2015). Community colleges also provide other opportunities, such as giving students an alternative career pathway, despite their interest in a bachelor's degree. As Dougherty (1992) noted: "...community colleges often inadvertently dampen student interest in transfer by drawing them into their occupational programs" (p. 196). While enrolling students in a vocational track is not in and of itself negative, the issue is that it is often low-income and minority students who are redirected from the opportunity to attend a four-year institution (Dougherty, 1992; Gross & Goldhaber, 2009). This pattern perpetuates stratification in both education and the broader society.

Beyond these patterns, the raw ELS:2002 data tell a compelling story about issues with postsecondary access related to race and socioeconomic status. Without

controlling for other variables, Black and African American students have 34% higher odds of attending a community college compared to White students. While the control variables mediate these differences, the raw data reveals significant issues in enrollment patterns by race. Additionally, in examining the breakdown of family SES quartile by race, it is apparent that significant disparities exist in the distribution of income and socioeconomic status over various racial demographics (see Table 4). For example, Hispanic families make up 16.3% of the sample population and 26.1% of the lowest SES quartile. On the other hand, White families make up 60.2% of the sample population and 79.4% of the highest SES quartile. These trends indicate it may be prudent to have a larger discussion about the intersections of race, class, and educational access in society along with any consideration of expanding community college access. Expanding access to the community college, with its lower comparative financial return (Gerber & Cheung, 2008; Ma et al., 2016), has the potential to perpetuate these existing inequalities instead of lessening them.

TABLE 4: WEIGHTED SAMPLE BREAKDOWN OF FAMILY SOCIOECONOMIC QUARTILE BY RACE

	Percent of Sample	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
White	60.2%	43.0%	64.6%	72.1%	79.4%
Black/African American	14.3%	20.1%	14.4%	12.1%	5.7%
Hispanic	16.3%	26.1%	11.6%	6.9%	5.8%
Other	9.2%	10.8%	9.4%	8.9%	9.0%

Also of note from the raw ELS:2002 data are the enrollment patterns of Hispanic students. Racial demographics in the United States have shifted

dramatically over the past 40 years and the shifts in demographics is why updating the analysis of the transfer pathway is so critical in the evolving discussion about stratification in postsecondary education. The number of Hispanic Americans in this country has more than doubled in size from 1980 to 2000 (Hobbs & Stoops, 2002) and the vast majority of the research in this field hails from national studies conducted in the 70s, 80s, and 90s. The analyses for this paper show that without control variables, the enrollment patterns of the Hispanic population are staggeringly different from other races in this study (see Table 5).

TABLE 5: WEIGHTED SAMPLE BREAKDOWN OF POSTSECONDARY ENTRY LEVEL OF DEGREE-INTENT STUDENTS BY RACE

	Percent of Sample*	Native 4-Year Enrollee	Community College Enrollee
White	65.5%	69.1%	57.3%
Black/African American	12.7%	12.3%	13.7%
Hispanic	12.3%	8.5%	20.8%
Other	9.6%	10.2%	8.2%

**Note the percentage of sample change from the SES table (Table 4) – student intent to obtain a degree differs significantly between races. Racial minorities are less likely to intend to obtain a bachelor’s degree, as queried in their senior year of high school.*

However, even with control variables, like SES and first-generation status, results indicate that the Hispanic population is still significantly impacted by the existence of the community college, unlike the Black/African American population identified in prior studies. Yet no indication exists to say that the transfer function operates in a way that increases the Hispanic population at four-year institutions. While concerns continue to exist about Black/African Americans’ access to the bachelor’s degree, results from this analysis demonstrates that Hispanic enrollment patterns

are significantly stratified by institution type first attended, well beyond that of any other minority in the population.

If policymakers continue to encourage the expansion of access to the community college, and by extension the transfer pathway, they will undoubtedly increase postsecondary education access generally and give more people the chance to complete certificate and vocational programs. The expansion of postsecondary education is a measure of progress that should not be discounted. However, two caveats warrant attention based on this analysis. First, odds are that those tracked into vocational and certificate programs will be minority and low-income students, thus continuing social and educational stratification, and second, community college access cannot alone significantly increase the racial and economic diversity of four-year institutions. As Dougherty and Kienzl noted in 2006, "If major differences exist in transfer rates by social background, the pursuit of equal access cannot stop simply with getting minority and working-class baccalaureate aspirants into the community college" (p. 454). As conflict theory would postulate and this research seems to confirm, it is not enough to get these students through the open door of the community college to get them to the four-year institution. The larger socioeconomic inequality in society, noted in the raw numbers of Tables 4 and 5, cannot be remedied by the lone work of the community college; Four-year institutions must take responsibility for stratification within their domains and broader society must account for economic and racial inequalities. Research in this paper supports the conclusion that community colleges do not transfer enough

students to resolve the vast stratification in postsecondary education, though they do chip away at it in a small way.

Although community colleges may contribute to changing the demographic patterns of the four-year institutional landscape by transferring more low- and middle-SES students than would normally attend four-year institutions, one of the biggest disparities in postsecondary education, racial diversity, is not significantly addressed by the transfer mechanism of community colleges. Labaree noted two decades ago: “...in spite of ‘false promises’ to provide equal opportunity, the primary function of [the two-year] institution is to promote the reproduction of social inequality” (1997, p. 217). The findings of this paper demonstrate that Labaree’s assertion that the community college is, perhaps unwillingly, a tool of social reproduction remains largely unchanged. Therefore, instead of simply expanding access to the community college, we must find more creative ways to facilitate access to public and private non-profit four-year institutions for low socioeconomic and racial minority students.

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ARTICLE THREE: MEASURING COMMUNITY COLLEGE STUDENT SUCCESS IN DEMOCRATIZING BACCALAUREATE ATTAINMENT

The American education system is stratified in a number of ways, reflecting stratification in the broader society. Postsecondary education in particular is stratified by characteristics like degree type, institutional selectivity, and enrollment patterns. Researchers, educators, and policymakers debate the role the transfer function of the community college plays in this stratification of postsecondary education. Decades of research has tried to determine if the transfer mechanism can facilitate a reduction in the stratified enrollment patterns at four-year institutions by providing an alternate pathway to the bachelor's degree for students, especially those who are low-income, minority, and first-generation students, which are populations less likely to enroll directly in a four-year institution (NSF, 2019). Many researchers coin the core of this debate as the democratization versus diversion effect of community college (Brint & Karabel, 1989), or the debate as to whether the community college provides access to the bachelor's degree (democratizes access) or if it redirects students away from bachelor's degree attainment (diverts access).

The purpose of this study is to update the existing and outdated democratization versus diversion research by examining the impact of the community college transfer mechanism on bachelor's degree attainment and time to degree completion. Specifically, the goal is to examine bachelor's degree completion rates for bachelor's degree aspirants both from their time of community college enrollment and post-transfer to a four-year institution, while controlling for demographic and academic variables. The analysis for this study also explores

transfer and native students' length of study from initial postsecondary enrollment through degree completion to determine if there are opportunity costs (delays in earnings) associated with community college attendance. This paper first provides background on the democratization versus diversion debate, the community college, and the policies that have affected it. Second, it presents a theoretical orientation for this research and then uses extant research to identify the challenges associated with the transfer pathway and the complexities with studying it. Third, the paper offers an outline of the data sources and methods used for this study. The last two sections detail and discuss the findings of the analysis.

POLICIES AND THE COMMUNITY COLLEGE EFFECT

Updating the extant research on the role community colleges play in bachelor's degree attainment and its associated opportunity costs is important because of major changes in policy that have affected the system of education since the vast majority of the extant literature in this field was completed. These changes include reductions in federal and state funding of higher education (Mullin, 2010), the Education (Student Loans) Act of 1998, the Higher Education Reauthorization Act of 2008, and various changes to the K-12 curriculum, like No Child Left Behind, among others. These policies have altered the funding of postsecondary education, revised the K-12 curriculums that, in part, prepare students for colleges and universities, and modified the ways by which students can fund their postsecondary education. These policies have undoubtedly manifested in transformations to how the public engages with higher education.

In addition to policy changes, the demographics of the American populace have changed over the past several decades. The Hispanic population has more than doubled in size from 1980 to 2000 (Hobbs & Stoops, 2002) and by 2003 became the largest minority population in America. This change has altered how education operates to serve these students: The Hispanic population who may speak English as a second language, tend to be younger, and have lower educational attainment rates compared to the majority population (Tienda, 2009). The combination of policy and demographic changes means that it is important to update the transfer pathway research, especially as policymakers at both the state and federal levels consider making community college access tuition-free to incentivize and encourage participation in postsecondary education (The White House, 2015).

Although community colleges were initially established to provide the first two years of a four-year education, they swiftly added vocational education to the curriculum once it became apparent that less than half of the admitted students demonstrated the academic aptitude to transfer to four-year institutions (Brint & Karabel, 1989). Today, the community college still provides certification and vocational programs, but politicians and the American public also have a heightened expectation that it provides a route to the bachelor's degree for students less likely to enroll directly in four-year institutions (Dougherty & Townsend, 2006). These institutions are expected to alleviate issues of stratification by getting low-income and minority students to the four-year institution, yet are trying to do so with lower funding than the majority of other postsecondary institutions (Mullin, 2010). The result is that the generalist, aid-all nature of the community college serves vital yet

seemingly contradictory missions in its work. This institution must meet the public and political demand to democratize access to four-year institutions for upward social mobility and also prepare workers primarily for middle- and low-level blue collar jobs (Dougherty, 1994) . The former of these two missions, democratizing access to the baccalaureate, may be facilitated in part through the transfer function of community colleges.

The origins of joining the terms democratization and diversion in the field of community college research are difficult to trace, though the usage seems to have been popularized in the early 1970s (Tinto, 1971). For the purposes of this paper, I examine the democratization versus diversion effect on baccalaureate degree attainment, not just the overall increase in access to community colleges afforded some students, as some democratization scholars have done. Leigh and Gill (2001) and Rouse (1995) found that community college increased overall education attainment, but far more research points to the diverting effect of community college on bachelor's degree completion. This paper's focus on degree attainment rather years of schooling is primarily due to the fact that the bachelor's degree has a far greater financial payoff than years of postsecondary schooling sans credential (Jaeger & Page, 1996). Additionally, unequal access to the bachelor's degree for various demographic populations, like low socioeconomic status and racial minority groups, has persisted through the decades (Ma et al., 2016), and the transfer mechanism theoretically exists to help mitigate this stratification in degree access.

Even though the rhetoric around community college expansion policies focuses on broadening educational opportunities generally, many advocates assume

that simply getting students to community college will increase baccalaureate attainment (a democratization effect). However, as Lee and Frank (1990) aptly noted: “The decreased social stratification in access to higher education offered by community colleges may be an illusion if a relatively small proportion of community college students eventually graduate from four-year institutions” (p. 178). If community colleges are not actually transferring students, especially students who would not normally attend a four-year institution, then they are not actually democratizing access to the baccalaureate as hoped; they may be diverting students instead. Additionally, if the community college transfer function results in a loss of earnings due to a delay in entry to the workforce, this result is likely an unintended consequence of community college enrollment and transfer.

Policies promoting tuition-free community college expand access to postsecondary education generally (American Association of Community Colleges, 2019). These two-year institutions often provide valuable vocational, certificate, and continuing education programs to a variety of students. However, as noted previously, policymakers and others perceive that the community college is a critical support in the effort to transfer low-income and minority students to four-year institutions to obtain a bachelor’s degree (The White House, 2015). The combination of dated extant research, current popularity about making community college tuition-free, and changes in policy over the past few decades means that this paper is poised to provide much needed updated context in the democratization versus diversion debate.

THEORETICAL ORIENTATION

The theoretical orientation of this paper views stratification and the related democratization versus diversion debate in postsecondary education through a lens of conflict theory. While other theories speak to the operation of education in society, like functional theory, conflict theory is appropriate for this analysis because it provides more testable explanations for why certain groups dominate certain positions in education and society (Collins, 2007). Conflict theory, at its core, assumes a tension in society and its structures based on the competing interests of individuals and groups. This conflict determines how structures and organizations operate (Ballantine, 1997, p. 9). In postsecondary education, conflict theory manifests as the stratification of people throughout the system, the differential monetary returns to academic degrees, and in the ways postsecondary education reproduces inequalities (Hout, 2006). Conflict theory suggests that the community college transfer mechanism exists to give the impression that an alternate pathway to the bachelor's degree exists for students willing to work for it (a democratization effect), but in reality would transfer relatively few students due to structural barriers in both the community college and the four-year institution that keep low-income and minority students from four-year schools (a diversion effect).

Conflict theory is most prominent in this paper in how it approaches the democratization versus diversion debate and the conclusions it draws from the data that are analyzed. There is rhetoric in extant literature on the democratization versus diversion debate which infers that community colleges are responsible for the failure of students to transfer. While this paper will address some of the reasons

community colleges struggle to help students reach the four-year institution, this paper also assumes cultural and structural tensions are at play in the transfer student pathway beyond the control of community colleges and what the models in these analyses can test. These tensions are visible in the social and political pressure on the community college to solve issues of stratified enrollment patterns, which deflects responsibility from the four-year institutions who fail to address stratified enrollment patterns within their purview. The analyses from this paper may inform future policy in that it looks at democratization and diversion in a way that incorporates considerations for historically unequal and competing groups (within race, class, sex). When policy is used as a mechanism to address educational stratification and the resulting inequalities, the struggle for advantage between groups is a critical factor that must be considered in policy development.

The research goals of this paper come in two parts: First, the data are analyzed to determine if degree attainment rates for community college enrollees and transfer differs from that of native four-year enrollees, while controlling for a variety of demographic variables and intent to obtain a bachelor's degree. The second part of the analyses seeks to determine if there is any variance in the length of time to degree completion between native four-year students and community college enrollees. The conflict-orientation to this research offers the prediction that the analyses of these data will indicate that community college enrollees do not graduate at the same rate as native four-year enrollees, despite intent from both populations to do so, and that the length of time to degree completion will be a penalty experienced by the transfer population.

Community colleges play a prominent role in the history and current function of postsecondary education and, despite the conflict-oriented view that they can likely do little to change four-year enrollment patterns, this process is worth updating for the reasons noted above and because policymakers continue to push this solution to stratification. The remainder of this paper will explore the transfer pathway, examine the methodological variations in the extant research on transfer patterns, and analyze data to determine whether the transfer pathway is a viable option for those in pursuit of a bachelor's degree.

EXTANT LITERATURE: THE TRANSFER STUDENT PATHWAY AND DIVERGENT RESEARCH

Community colleges increase access to postsecondary education through low enrollment barriers and relatively low tuition (Hoachlander, Sikora, & Horn, 2003). Despite its accessible nature, many researchers and administrators question whether the community college can be an effective pathway to the four-year institution, despite social and political pressure to serve in this capacity. This section first explores the demographics of community college transfer students, identifies common issues students encounter in the pursuit of a bachelor's degree via the community college transfer pathway, and why concern about a diverting effect exists. The remainder of the section explores the variation in variable use within the extant democratization versus diversion literature and how that variation informed the design of this study.

Transfer students often look different from students who enroll in community colleges. Community college enrollees are more likely to be racial minorities, have lower levels of academic preparation, and come from lower

socioeconomic backgrounds (Bailey et al., 2003; Ellwood & Kane, 2000; Lee & Frank, 1990; Wassmer, Moore, & Shulock, 2004; Whitaker & Pascarella, 1994). On the other hand, past research indicates that transfer students, while they differ from institution to institution, tend to be of higher socioeconomic status than their non-transferring community college peers (Dowd & Melguizo, 2008; Lee et al., 1993; Lee & Frank, 1990). These patterns hold even when students have access to better academic resources in high school (Cabrera et al., 2005, p. 161). In fact, using High School & Beyond 1980 data, Lee and Frank (1990) found that in terms of socioeconomic and demographic makeup, transfer students look less like community college enrollees and more like the initial four-year enrollees in the colleges to which they transfer.

If students do have the opportunity to transfer, which is far from guaranteed, they often run into roadblocks with the actual transfer process. As Dougherty noted in his 1992 paper, “If baccalaureate aspirants survive the first one or two years of community college, they face a second obstacle: transferring to a four-year college in order to continue to pursue their degree” (p. 196). Students must be able to navigate the application and transition process to the four-year institution, including the financial aid application, which research shows is a barrier to students attending four-year institutions in the first place (Schudde & Goldrick-Rab, 2015). The barriers that lie within the admissions process and the transfer of credits are difficult to navigate, even for students who have assistance, let alone for the vast majority of low-income students who do not have college-educated family and peers to assist them through the process (Schudde & Goldrick-Rab, 2015).

Once a student has completed the application process for a four-year institution, many find the transfer of credits from one institution to another challenging, even for students with resources. As Handel (2008) noted: “Transferring credits from a community college to a four-year institution—even under the best of circumstances—is a messy, unpredictable business, leaving students, families, counselors, and others baffled and frustrated” (p. 4). Articulation agreements, or the formal acknowledgement that the receiving institution accepts certain courses, ease this process but are not found at all institutions. Some researchers propose universal course numbering systems, but it is a significant challenge for institutions to come to an agreement on academic standards for course requirements (Handel, 2008). In general, issues with course transfer make the transfer process difficult for students to navigate and may significantly lengthen the time of study and delay labor market entry if courses are not accepted.

If students manage to successfully complete their tenure at community colleges and navigate the transfer process, they still face obstacles once they reach the four-year institution. Many experience loss-of-credits, struggle with the cost of college, find they lack academic preparation, and are unfamiliar with the academic and social environments and expectations of the four-year institution (Glass Jr. & Bunn, 1998; Laanan et al., 2010). These challenges affect students’ baccalaureate success. Research on community college transfer students indicates they experience drops in GPA, take longer to complete their degrees, and even experience increased attrition rates (Monaghan & Attewell, 2015). Within the research on time to

completion and degree attainment, however, extant research demonstrates significant methodological variation and findings worth exploring.

A characteristic of the existing democratization versus diversion literature is that a great deal of variation exists in the approaches researchers have taken to study the topic, despite the rough idea of the transfer pathway outlined above. These differing approaches drive divergent conclusions, in large part due to the selection of variables used by researchers. The remainder of this section examines some of the most common variable selections and parameters in extant research and validates the research parameters used for this study, particularly in length of study, definition of transfer, population scope, and the use of demographic variables.

Community college enrollees and transfers frequently attend school part-time, have more stops and starts in academic programs, and are sometimes required to take remedial courses, which may extend their period of study (Long & Kurlaender, 2009). However, many studies do not follow students long enough to encompass the full duration of their postsecondary career, making degree completion difficult to measure. Studies that followed students on their path to degree completion well beyond the four- to five-year timespan of a traditional bachelor's degree program tended to see different results than those who ended their studies at the four- or five- year mark. Wassmer, Moore, and Shulock (2004) analyzed transfer rates at both three years and six years after community college enrollment and found that the six-year window demonstrated a significantly different, and more positive, depiction of transfer rates. The difference in findings the authors note when their parameters were set at three and six years is a strong

example of how timespan matters when working with community college transfer students. Most common practice among researchers cited in this study suggests that six years is a minimally appropriate timespan for tracking postsecondary education students (Wassmer et al., 2004) because of the longer time it can take transfer students to graduate.

While some researchers may make an argument to include as many student outcomes (i.e. degree completions) as possible, and thus make the study follow participants as long as reasonably possible, it is important to consider the duration of a study for additional reasons. For example, if students take significantly longer to finish their degree, such as six, eight, or ten years, systemic issues may exist within the postsecondary education pipeline that are important to examine. That is to say, while studies that collect data over a range of eight or more years would seem better at capturing a more realistic picture of length of study and degree completion rates, especially for vulnerable populations, the longer duration may hide systemic issues that are preventing earlier graduation like loss of credits or poor academic performance (Wassmer, et al., 2004). The length of time it takes someone to finish schooling is also important to consider in an analysis of educational pathways due to the loss of income resulting from a delay in entrance to the labor force (Melguizo et al., 2008). This paper uses the Educational Longitudinal Study of 2002, which followed students for ten years, eight of which were theoretically post-high school completion. To account for any issues within time to completion, this analysis also examines average time to degree completion between transfer and native students

to determine if there is a penalty associated with the transfer pathway within that eight-year span.

Beyond the issues associated with the length of time studies follow participants, results also vary significantly because of the variables used in the analysis. For example, Lee, Mackie-Lewis, and Marks (1993), using HS&B data from the 1980s, found that when they used unadjusted data (i.e. data without the demographic, behavioral, and institutional impact variables) to compare students who successfully transferred from community college to a four-year institution to their rising junior counterparts, the probability of attaining a baccalaureate degree was 69% for both groups. Using unadjusted data and data from the National Education Longitudinal Study of 1988 (NELS:88), Melguizo and Dowd (2009) compared degree completion rates for transfer students and rising juniors and found a gap of 30% in completion rates within 5.6 years of graduation from high school (p. 69). However, when controlling for self-selection bias, socioeconomic status, and academic preparation, they found the difference narrowed and became statistically non-significant. Other studies noted similar completion rates between the two groups at the post-transfer and rising-junior markers when using similar demographic control variables (Lee et al., 1993; Melguizo et al., 2011; Monaghan & Attewell, 2015). What these data reveal is that when compared to students like them, meaning those who are of a similar SES and other such demographics, the completion rates for community college transfers and rising junior students are similar. These findings, taken together, demonstrate the importance of variable selection and why the analysis in this paper includes demographic variables found

commonly among all similarly oriented studies: race, sex, SES, and first-generation status.

Some studies employed a wider scope to measure the odds of baccalaureate attainment for community college students in general, not just those students who successfully transferred to a four-year institution (i.e. to measure baccalaureate attainment from point of entry to the community college, not post-transfer).

Although the numbers vary from study to study, the consensus is that community college enrollees complete baccalaureate degrees less frequently than their four-year counterparts. For example, Cabrera, Burkum, and La Nasa (2005), using High School and Beyond (HS&B) data from the early 1980s, found that students with high-SES characteristics were 81% more likely to obtain a four-year degree than their low-income peers, regardless of any additional college preparatory academic resources given to low-income students.

In another example with comparable results, Long and Kurlaender (2009) studied community college students from the Ohio public school system and found that only 26% of these students obtained bachelor's degrees within nine years of beginning their postsecondary education, while nearly two and three times as many students initially enrolled in Ohio public four-year institutions graduated (50% for non-selective 4-year schools and 73% for selective 4-year schools). The results also showed that the potential for a diverting effect of community college attendance on the bachelor's degree was greater in the Black student population when compared to White students with similar demographics (p. 42). These results may indicate

that the community college may participate in the continued stratification of four-year institutions by diverting minority students.

Using a similar starting point of community college enrollment and NELS:88 data, Alfonso (2006) controlled for pathways to the baccalaureate (i.e. interruptions, part-time enrollment, high school curriculum) and found the probability of completing a bachelor's degree for community college enrollees was reduced by 21% to 33% when compared to four-year enrollees (Alfonso, 2006). Other studies similarly indicate an overall negative relationship between initially attending a community college and enrolling directly in a four-year institution (Bailey, Alfonso, Scott, & Leinback, 2004; Doyle, 2009; Sandy, Gonzalez, & Hilmer, 2006; Whitaker & Pascarella, 1994).

Studies cited thus far seem at odds: some research indicates that community colleges divert four-year degree attainment while other research says they increase that same degree attainment. In order to tease out a pattern in the findings, Table 6 below demonstrates a divide between the questions asked and results found. The two right columns are divided between studies that determined community colleges have a diversion effect (left) and a democratization effect (right). The research that found a diverting effect of the community college studied students from their enrollment in community colleges through their intended bachelor's degree attainment (which may or may not have been achieved). The studies that found a democratizing effect studied students only from the time of their transfer from a community college to a four-year institution through their intended bachelor's degree attainment. As this table shows, the parameters a researcher uses to

determine student success are critical: measuring the impact of community college depends in large part on what postsecondary education is included in the measurement.

TABLE 6: SUMMARY OF FINDINGS IN PAST DEMOCRATIZATION AND DIVERSION STUDIES

Data Source	Community College Penalty to Baccalaureate Attainment (<i>Diversion</i>)	Increases Baccalaureate Access and Achievement (<i>Democratization</i>)
National Longitudinal Study (1972)	Sandy et al. (2006)**; Whitaker & Pascarella (2015)**+	
High School & Beyond National Survey (1980)	Sandy et al. (2006)**; Cabrera et al. (2005)**	Lee et al. (1993)*
National Education Longitudinal Study (1988)	Alfonso (2006)**	Melguizo et al. (2011)*; Melguizo & Dowd (2009)*
Beginning Postsecondary Study (1990/1992/1996)	Dougherty & Kienzl (2006)**	
Beginning Postsecondary Study (1996/1998/2001)	Sandy et al. (2006)**; Doyle (2009)**	
Beginning Postsecondary Study (2004/2006/2009)	Monaghan & Attewell (2015)**	Monaghan & Attewell (2015)*
Ohio (State-Level) Data (1998)	Long & Kurlaender (2009)**	

*Findings when examining post-transfer rates of Baccalaureate attainment

**Findings when examining rates of Baccalaureate success from start of community college through transfer and degree attainment

+Data showed that once students completed the transfer, achievement was similar between rising juniors and transfer juniors

The overall pattern that can be derived from this analysis is that community college has a diverting effect until the student completes the transfer to the four-year institution, where the community college diversion effect vanishes. The intent of the updated study in this paper is to analyze the data at multiple points to allow

for the full degree attainment pathway to be viewed: An analysis conducted on student outcomes at the pre- and post-transfer points will demonstrate if the pattern found in past literature continues to exist.

I selected degree expectations (or intent to get a bachelor's degree or higher) as a control variable for this study because prominent researchers in the field, like Sandy, Gonzalez, and Hilmer (2006), indicate that intention or purpose may be important to pay attention to in transfer research. They hypothesize that students who attend a community college may simply be less interested in persisting in higher education through the baccalaureate degree and thus skew the results. Therefore, I used a measurement of student intention to obtain a bachelor's degree or higher, as indicated in the spring semester of students' senior year, in order to develop a better measure of the community college impact. Without the intent variable, an analysis of who among community college students obtains a bachelor's degree is misleading because of the various educational offerings beyond transfer that are available at the community college.

Institutional sector is a variable that not all studies included in the democratization vs. diversion literature but is relevant to consider in these analyses due to the significant variance in graduation rates by institutional sector (U.S. Department of Education, 2018, Table 326.10). Private, non-profit institutions, for example, have significantly higher graduation rates than private, for-profit institutions. Thus, sector is important to consider in four-year degree pathways and is included as a variable in the post-transfer and time to degree completion analyses. As Horn (2006) notes: "...a more in-depth picture of graduation rates may

be gained by comparing institutions that are similar with respect to the characteristics of their student bodies, rather than by making comparisons across all institutions.” Four-year sector combined with other variables which are also highly predictive of degree attainment, such as high school GPA and family SES, should allow for a better comparison of like groups in the analysis.

Thus far, this paper has provided a summary of existing democratization and diversion literature and the challenges faced by community college transfer students. It also examined past studies and the complexities associated with data parameters. Using this information, this paper analyses a recently released national dataset to reawaken the democratization versus diversion debate in order to expand and update the transfer pathway research.

DATA AND METHODS

The transfer function may not be a viable pathway to the baccalaureate if, when controlling for demographic similarities, community college enrollees and transfers are not experiencing similar outcomes as native four-year enrollees. To examine this issue, this paper examines the impact of community college attendance, pre- and post-transfer, on bachelor’s degree attainment when controlling for degree expectations, high school GPA, first-generation status, race, sex, and family SES (four-year sector was added to the post-transfer question). As was demonstrated in the literature review section of this paper, the two-point analysis in this question is crucial in that it will show whether there is a penalty in community college attendance both before transfer (when there was only transfer intent) and after transfer occurs. This paper also examines whether there are

differences between native and transfer students in time to degree completion while controlling for high school GPA, family socioeconomic status (SES), race, first-generation status, four-year sector, and sex.

For this analysis I used the dataset from the Education Longitudinal Study of 2002 (ELS:2002). ELS:2002 is a nationally representative longitudinal study of students throughout their secondary and postsecondary experiences, with data collected from not just the students, but their parents/guardians, math and English teachers, and school administrators. Starting with 10th graders in 2002, the survey was re-administered in 2004, 2006, and 2012 and school transcripts were collected in 2005 and 2013. The purpose of this study was to track the patterns of college access and persistence of students from high school through their post-secondary college attendance years. The ten-year duration of the study is notable in that it should grant the ability to follow students approximately eight years after high school, a timeline appropriate for studying community college attendees, as noted in the literature review.

The data I used for these analyses were collected, cleaned, and imputed by the National Center for Education Statistics (NCES). I would like to acknowledge that the variable names used by NCES may be considered problematic or offensive, especially those related to the designation of “Hispanic” as a race and “sex” as binary. In this paper, I used the variable names as defined by NCES with the intent of being true to the data, but understand the complexities inherent in these designations.

Using theoretical underpinnings to guide my modifications, I adjusted several of the variables to binary or categorical variables to prepare the data for analysis. For example, in the “family SES” variable I used NCES’s SES composite from the first follow-up survey and created quartiles for my population of interest to allow for better interpretation. NCES developed the composite score through variables such as parent occupation data (measured using the 1989 GSS occupational prestige score), parent education, and base year income, as reported in both the parent and student questionnaires. The change to quartiles from a continuous variable allowed for better reporting of the differences between the attendees since quartiles are an easier variable to interpret than a one point change in socioeconomic status composite score.

“Average Time to Degree” was another variable I modified, which I define as a measure of the number of months between postsecondary entrance and degree attainment. There are 5,100 unadjusted responses to this question, ranging from 33 months to 100 months. 53.17 months was the average amount of time it took for the adjusted native student population to complete their degree in the ELS:2002 dataset. I calculated one standard deviation above and below the average native student’s time to completion and removed them from the analysis in order to reduce the random chance associated with time to completion. One standard deviation was calculated at 12.465 months. Therefore, the below average time to degree was calculated as any completion between 33 and 40.705 months and above average time to degree was calculated as any completion between 65.637 and 100 months. Though this analysis significantly reduced the sample population, there is ample

power after utilizing the complex samples analysis to deem the cut points sufficient to get a generalizable result; It also provides a more conservative test of the hypothesis that transfer students take longer to complete their degree.

Race was another category that required modification. I modified student race from the original dataset due to low levels of respondents who identified as “American Indian/Alaska Native,” “non-Hispanic, Asian, Hawaii/Pac. Islander, non-Hispanic,” and “more than one race, non-Hispanic.” I combined these three categories into one category labeled “other.” In addition to these categories, I collapsed the “Hispanic, no race specified” and “Hispanic, race specified” categories into one “Hispanic” category due to low response rates within these categories.

Finally, the last continuous variable I modified was GPA. I used high school GPA as a control variable because it is often used by researchers as an indicator of academic ability and measure of likelihood for baccalaureate attainment (Wang, 2009). “The superiority of high school grade point average in predicting long-term college outcomes is consistently evident across all academic disciplines, campuses and freshman cohorts. High-school grades...remain the best available indicator with which to hazard predictions of student success in college” (Geiser & Santelices, 2007, pp. 26–27). NCES grouped the data by half-point increments, with the exception of the lowest GPA level, 0.00-1.00. I used the GPA span of the population I studied to adjust the scores into slightly different groupings: 0.00-2.0, 2.01-3.0, 3.01-3.50, and 3.51-4.00. These score ranges better represent an even distribution of GPA for the population of interest but still mirror the classifications identified by NCES.

The variables I included in these analyses were selected for their theoretical influence on the dependent variable studied and the importance of comparing “like” students. As noted previously, degree expectations, high school GPA, first-generation status, family socioeconomic status, four-year sector, and sex were all selected due to strong research that points to their influence on postsecondary outcomes (Porchea et al., 2010; Reason, 2003), including degree attainment and time to degree completion.

The ELS:2002 data spans multiple survey years and is considered a complex sample due to unequal selection probabilities, stratification within the sample, and clustering. That is, the selection of individuals within the sample are not independent of one another, as they would be in a simple random survey. Concerns with this type of data include the sample not being representative of the larger population and the existence of bias within the estimation of population variances and standard errors. To account for these concerns, I employed a complex samples design to analyze the data using logistic regression in SPSS. I used the combination of a strata variable, a cluster variable (primary sampling units), and a sample weight variable developed by NCES to create the data analysis plan modeled in the logistic regression. The weight variable I selected comes from the NCES ELS:2002 dataset and was weighted to model the surveys and transcript data used for the analysis (1st follow-up, 3rd follow-up, and high school transcripts). I used listwise deletion for treating missing data for both analyses and the sample size remained robust. The percent of missing data was high, though expected, as not all of the 16,000+ respondents to the survey attended and graduated from postsecondary institutions.

The number of postsecondary enrollees reduced the available sample to 7,562 of those original respondents. The adjusted population of postsecondary enrollees, using a complex samples analysis, was $n=1,941,770.879$. Missing data in this study was primarily due to the smaller number of students who enrolled and/or completed postsecondary education as compared to the larger population enrolled in the study (which began, as noted previously, during high school) as well as natural attrition from the study. Power analyses conducted for each question showed adequate (high) power using the adjusted n in the complex samples method.

While some assumptions and limitations are inherent to logistic regression, the complex samples plan I used addresses a portion of those, as noted above. I performed one additional check to test for multicollinearity among the independent variables using Variable Inflation Factors (VIF). All of the variables I tested were considered within acceptable levels of collinearity, having VIF collinearity statistics well below five (VIF statistics ranged from 1.00 to 1.09). Additionally, all models showed improvement with each addition of control variables, as demonstrated by increases in the pseudo r -square tests.

TABLE 7: VARIABLES SELECTED AND CODED FROM EDUCATIONAL LONGITUDINAL STUDY OF 2002 (ELS: 2002)

Indicator	Used as:	Variable Definition/ Name	Data	Data Source
Degree Attainment	Control/Predictor – Bachelor's or Higher (1) & no Bachelor's (0)	Bachelor's degree or higher attainment	Achievement of education level noted (F3 Attainment)*	Third follow-up survey (Final survey)
Degree Expectations / Intent	Control – Bachelor's or Higher (1) & Less than Bachelor's (0)	Bachelor's Degree Expected by Student in Senior Year	Composite score of highest level of ed. respondent expects to complete*	First follow-up student survey (Spring of 12 th grade)
High School GPA	Control– Below 2.00 HS GPA 2.01-3.00 HS GPA 3.01-3.50 HS GPA 3.51-4.00 HS GPA	High School GPA	4.0 scale of cumulative high school GPA	High School Transcripts
First-Generation	Control/Predictor – Parent w/ no BA (1) & Parent w/ BA or Higher (0)	First Generation to Obtain a bachelor's degree or higher	Composite score of highest level of education achieved of either parent*	First follow-up, Comb. of parent & student survey
Family SES Quartile (F1)	Control – SES quartile: Lowest quartile (1), Second quartile (2), Third quartile (3), Highest quartile (4)	Family SES	Composite score of combined parent SES*	First follow-up survey
Level of First Postsecondary College Experience	Predictor – Two-year institution (1) & Four-year institution (0)	Institution Type First Attended	Indicator of whether student's first post-secondary institution was a community college (CC)	Third follow-up survey (final survey)
Time to degree	Predictor – Above Average Time -1 SD or 33-40.705 months (1) & Below Average Time -1 SD or 65.637-100 months (0)	Average time to degree	Number of months between PS entry and BA completion*	Third Follow-up, created by NCES: calculated from date of first PS entry to date of graduation

*Missing data left blank or imputed by NCES where statistically appropriate

Table 7 (continued): *Variables Selected and Coded from Educational Longitudinal Study of 2002 (ELS: 2002)*

Indicator	Used as:	Variable Definition/ Name	Data	Data Source
Sex ^	Control/predictor – Female (1) & Male (0)	Female Respondent	Composite sex of student*	First follow-up survey
Student Race ^	Control/Predictor – White (0), Black/African American (1), Hispanic(2), Other (3)	Collapsed Race Categories	Composite student race and ethnicity self-report data*	First follow-up student and parent survey
Sector of four-year Institution	Control - Public 4-year (1), Private 4-year (2), Private for-profit 4-year (3)	FourYrSector	Asked as last four-year institution attended	Data from Third Follow-up (final survey)
Community College Transfer Student Indicator	Predictor – CC Transfer Student (1) & Native 4-year (0)	CC Transfer Indicator	Identified using first-attended data (2-year) and last or current attended (4-year)	Data from Third Follow-up (final survey)

*Missing data left blank or imputed by NCES where statistically appropriate

^The author acknowledges that these categories may be problematic but used them as coded by NCES

For question one, I performed two complex samples logistic regressions to assess the impact of community college attendance on baccalaureate attainment, pre- and post-transfer, for respondents in the Educational Longitudinal Study of 2002 (ELS:2002). The dependent variable was bachelor's degree (or higher) attainment (Got Bachelor's or higher (1), no bachelor's (0)). The subpopulation used in the analysis included those students who indicated on the first follow-up survey (spring of their senior year) their expectation of obtaining a bachelor's degree or higher level of education. The model contained six theory-based independent control variables: family SES, first-generation status, student race, high school GPA, sex, and institution type first attended (and institutional sector for part two of

question one). The analysis was run with two separate independent variables of interest: the type/level of first postsecondary institution attendance (“Institution Type First Attended”) and community college transfer status (“CC Transfer Indicator”).

For question two, I again performed a complex samples logistic regression to assess the impact of community college attendance on time to completion (Above Average Time (1) & Below Average Time (0)). The same data were used as in question one, though in this analysis the subpopulation was comprised of students who obtained a bachelor’s degree or higher by the final survey. The model contained the same six theory-based independent control variables as question one: family SES, first-generation status, student race, high school GPA indicator, sex, and institution type first attended.

Each analysis is presented in a table format with each variable subset using a reference variable to compare to the other variables in the model (e.g. “female” is noted in the table and “male” is the reference or comparison variable). The findings are presented in an odds ratio format, with a result greater than one demonstrating a positive relationship between variables and a result below one demonstrating a negative relationship between variables. Odds ratios indicate the odds or likelihood that a result occurs. For example, if the odds ratio is .50 for a female student to take a science course, the result indicates that a female student is 50% less likely or has half the odds compared to a male student to take a science course.

RESULTS

QUESTION 1A: PRE-TRANSFER FINDINGS

The first part of this analysis looks at the impact of community college attendance, pre-transfer, on bachelor's degree attainment when controlling for degree expectations, high school GPA, first-generation status, race, sex, and family SES. Using "institution type first attended" as the independent variable of interest on bachelor's degree attainment (dependent variable) in the regression, the regression was statistically significant with an unweighted 7,562 respondents included ($n=7,562$, $df=11$). As noted in Table 8, all but one of the independent variables made statistically significant contributions to the model ($p<.01$, sex variable removed due to lack of significance at $p<.05$) and increased the pseudo r-square results significantly from the base model.

Overall, the model shows those students who intended to receive a bachelor's degree and first attended a four-year institution to have three times higher odds of obtaining a bachelor's degree or higher when compared with those who first attended a community college (95% CI 2.674, 3.720). In other words, people who attend a four-year institution first in their postsecondary career are over three times as likely to get a bachelor's degree as those who attend a two-year institution first, even when factoring in all relevant control variables.

TABLE 8: BACHELOR'S (OR HIGHER) DEGREE ATTAINMENT DIFFERENCES FOR COMMUNITY COLLEGE ENTRANTS AND NATIVE FOUR-YEAR ENTRANTS EIGHT YEARS AFTER HIGH SCHOOL GRADUATION

($n= 7,562$ unweighted; 1,941,770.879 weighted)

Variables	Sig.	Odds Ratio
-----------	------	------------

		(95% CI)
Model	.000	--
Intercept	.000	--
First Attended	.000	
Native 4-Year Student		3.154 (2.674, 3.720)
Control Variables		
Race	.004	--
Parent Education	.008	--
Family SES Quartile	.000	--
High School GPA	.000	--

Subpopulation: Degree Intent = Bachelor's or Higher

Dependent Variable: Degree Attainment (reference category = Less than Bachelor's)

Model: (Intercept), InstitutionTypeFirstAttended, FirstGen, Race, Family SES, HSGPA

Reference category: Institution type first attended: Community college entrant

In order to ascertain whether students were getting any form of credential, I ran an additional analysis to determine the effect of institution type first attended on level of education earned, using a sub-population of students who expected to earn a bachelor's degree, as asked in the 1st follow-up survey. The first analysis, as noted previously, demonstrates that even when controlling for GPA, race, first-generation status, and family SES, first attending a community college significantly reduces the likelihood of bachelor's degree attainment. In the analysis of the overall impact of community college on credential attainment, the findings indicate that students have roughly four times higher odds of obtaining an associate's degree as their highest form of postsecondary education over a bachelor's degree when they first attend a two-year institution rather than a four-year institution (95% CI 3.315, 5.672), despite indicating an intent to obtain a bachelor's degree. These findings demonstrate a significant potential diversion effect of the community college for students who intend to obtain a bachelor's degree.

TABLE 9: HIGHEST LEVEL OF EDUCATION ACHIEVED EIGHT YEARS AFTER HIGH SCHOOL GRADUATION: DIFFERENCES BETWEEN COMMUNITY COLLEGE ENTRANTS AND NATIVE FOUR-YEAR ENTRANTS

(n=7,562 unweighted; 1,941,770.879 weighted)

Variables	Sig.	Odds Ratio (95% CI)
Model	.000	--
Intercept	.000	--
Degree Attainment	.000	
No credential		2.306 (1.921, 2.767)
Associate's Degree		4.337 (3.315, 5.672)
Control Variables		
Race	.000	--
Parent Education	.019	--
Sex	.002	--
Family SES Quartile	.000	--
High School GPA	.000	--

Subpopulation: Degree Intent = Bachelor's or Higher

Dependent Variable: Level of First Postsecondary College Experience (reference category = Native 4-Year Enrollee)

Model: (Intercept), Sex, First Gen, Race, Family SES, HSGPA, Attainment

Reference category: Degree attainment: Bachelor's degree

QUESTION 1B: POST-TRANSFER FINDINGS

The second analysis of question one examined the impact of community college attendance, post-transfer, on bachelor's degree attainment when controlling for degree expectations, high school GPA, first-generation status, race, sex, institutional sector, and family SES. Using "CC transfer student" as the independent variable of interest on bachelor's degree attainment (dependent variable) in the regression, the regression was statistically significant with 5,723 unweighted respondents included (n=5,723, df=13). As noted in table 10, the independent variables make statistically significant contributions (at $p < .01$ and $p < .05$) with the exception of our variable of interest ($p = .429$).

TABLE 10: BACHELOR'S (OR HIGHER) DEGREE ATTAINMENT DIFFERENCES FOR COMMUNITY COLLEGE TRANSFER STUDENTS AND NATIVE FOUR-YEAR STUDENTS EIGHT YEARS AFTER HIGH SCHOOL GRADUATION

(n= 5,723 unweighted; 1,406,424.295 weighted)

Variables	Sig.	Odds Ratio (95% CI)
Model	.000	--
Intercept	.109	--
Pathway	.429	
Native Students		1.096 (.873, 1.377)
Control Variables		
Race	.038	--
Parent Education	.017	--
Family SES Quartile	.015	--
High School GPA	.000	--
Four Year Sector	.000	--

Subpopulation: Degree Intent = Bachelor's or Higher

Dependent Variable: Degree Attainment (reference category = Less than Bachelor's)

Model: (Intercept), FamilySES, HSGPA, FirstGen, Race, FourYrSector, CC Transfer

Reference category: Pathway: Community college transfer student

The findings of the analysis show no statistically significant difference between transfer and native students in terms of bachelor's degree attainment. Students who intended to receive a bachelor's degree and first attended a four-year institution show no statistically significant difference in obtaining a bachelor's degree or higher as compared to those who first attended a two-year institution and transferred (95% CI .873, 1.377) when factoring in student degree expectations, family SES, institutional sector, race, first-generation status, and high school GPA (sex was again not significant at $p < .05$). These findings indicate that once community college students make it to the four-year institution, their odds of completing a degree are similar to those of native students.

QUESTION 2

Question two analyzes the impact of community college attendance on the length of time it takes to obtain a bachelor's degree when controlling for high school GPA, family SES, sex, race, first-generation, and sector of the four-year institution attended. Using "institution type first attended" as the independent variable of interest on an average time to degree indicator (dependent variable) in the regression, the model was statistically significant with 4,147 unweighted respondents included ($n=4,147$, $df=10$). As noted in Table 11, all of the independent variables made statistically significant contributions to the model at $p<.01$, with the exception of sex which was significant at $p<.05$.

The model shows that of students who received a bachelor's degree, those who attend a four-year institution first have odds over two times higher of completing their degree in average time compared to those who first attend a two-year institution (95% CI 1.469, 4.755). In other words, people who first attend a four-year institution have odds two and a half times higher of completing their degree in average time as compared with community college transfer students, even when controlling for GPA, sex, four-year sector, and family SES (race and first-generation status were not significant at $p<.05$ in the model).

TABLE 11: ARE COMMUNITY COLLEGE TRANSFER STUDENTS MORE LIKELY THAN NATIVE-FOUR YEAR STUDENTS TO TAKE LONGER THAN AVERAGE TO OBTAIN A BACHELOR'S DEGREE?
(n= 966 unweighted; 232,045.895 weighted)

Variables	Sig.	Odds Ratio (95% CI)
Model	.000	--
Intercept	.000	--
Pathway	.000	
CC Transfer Student		2.643 (1.469, 4.755)
Control Variables		
Four Year Sector	.000	--
Sex	.024	--
Family SES Quartile	.001	--
High School GPA	.000	--

Subpopulation: Degree Intent = Bachelor's or Higher

Dependent Variable: Time to Degree (reference category = Average or less)

Model: (Intercept), Sex, Family SES, HSGPA, FourYrSector, CC Transfer

Reference category: Institution type first attended: Native four-year enrollee

SUMMARY AND DISCUSSION

As noted previously, extant and outdated research in the study of democratization versus diversion have primarily examined in piecemeal fashion the role of the community college transfer function on baccalaureate attainment. Despite a plethora of extant research which says otherwise, policymakers and the general public still perceive the community college to be a viable, expanded route to the bachelor's degree for students who were less likely to attend a four-year institution directly out of high school (Dougherty & Townsend, 2006). This study was intended to understand the full community college impact on the baccalaureate attainment pathway to discern if community colleges were facilitating access to or continuing to divert students from the bachelor's degree and whether community college students experienced a penalty in time to degree completion as compared to native four-year students.

Overall, the results of this study demonstrate that if students can actually transfer to a four-year institution, they have as strong a likelihood of completing a bachelor's degree as native students. However, the other questions answered in this study align closely with the conflict theory-oriented predictions made at the start of this paper. As the findings from the first analysis show, students often do not make it to the point of transfer, despite an intent to obtain a bachelor's degree. Students who first attend a four-year institution have three times higher odds of obtaining a bachelor's degree as those who attend a two-year institution first. It should be concerning that even when factoring in student degree expectations, family SES, race, first-generation status, and high school GPA, this gap remains.

Also significant in these findings is the increase in time to degree completion for community college transfer students: Students who first attend a community college experience odds two and a half times higher of completing a bachelor's degree in a longer than average period as compared to native students. This opportunity cost (delay in salary/wages) from taking the community college route to the bachelor's degree might outweigh any benefit of the low-cost or tuition-free aspects of community college attendance (Melguizo et al., 2008). For students who are already low-income and minority, this delay in earnings and overall impact on lifetime earnings can have more significant consequences intergenerationally and in terms of class mobility in that the build-up of generational wealth is stunted or delayed (Cornacchione & Daugherty, 2013).

These results indicate that community college is not a strong route to the bachelor's degree for students who are less likely to attend four-year institutions

generally. In fact, data from this analysis show that only 34.6% of community college enrollees who intended to get a bachelor's degree transferred to a four-year institution. Although students who did not transfer may have found another career or educational pursuit suitable for them at the community college, this analysis implies that the community college is perhaps not a reliable conduit for or significant contributor to the bachelor's degree pathway, especially for low-income and minority students. These findings are concerning if democratization is the goal of education because of the imbalance in attendance patterns and outcomes between community college entrants and native students. As Karabel (1986) notes:

From the perspective of equity of opportunity, the implications of this pattern of [low socioeconomic] overrepresentation – one in which individuals from working-class and minority backgrounds tend to be concentrated in the very institutions that offer them the least chance of obtaining a bachelor's degree – are sobering. (p. 17)

Inferred in Karabel's comment is that community colleges are playing a role to reproduce social inequality and maintain stratification, not democratize access to bachelor's degrees as some advocates of the community college transfer mechanism would suggest. It is significant that a quote from 1986 continues to show relevance today, because it demonstrates that decades of policies aimed at the community college and its transfer mechanism seem to have made little difference.

A wider view of this issue demonstrates that nationally we have problems with educational access and completion. From the raw ELS:2002 data, it is clear that the disparities among groups' degree attainment are significant (Table 12). Black

and African American and Hispanic students are overrepresented in the number of students who earned less than a bachelor's degree and White students are overrepresented in the percent of students who earned a bachelor's degree or higher. These disparities, which are admittedly void of demographic controls, are indicative of the widespread inequalities in socioeconomic status, race, and educational access in America. It is logical for legislators and policymakers to try to find a viable route to the four-year institution to lessen these inequalities in outcomes. However, it appears evident that the community college is not structured in a way that can make up for the larger social and economic inequalities that play out in the educational system.

TABLE 12: WEIGHTED SAMPLE BREAKDOWN OF DEGREE ATTAINMENT BY RACE

	White	Black/ African American	Hispanic	Other
Percent of Sample	60.2%	14.3%	16.3%	9.2%
Earned Bachelor's or Higher	72.1%	8.8%	8.8%	10.4%
Earned Less than Bachelor's	54.2%	17.1%	20.1%	8.7%

Despite perhaps the insurmountable task to change four-year enrollment patterns that is placed on the shoulders of the community college, the expectation continues to persist. Decades of research has gone into trying to understand what issues exist within the community college that may hinder its success as a pathway to the four-year degree. Researchers have found that the reasons why community colleges struggle to retain and transfer their students are vast: conflicting missions translate into less focus on and assistance for students (Dougherty & Townsend,

2006); “merit” is still the key driver of college admissions (Karabel, 2006); and the complex transfer process is often fraught with issues from application costs to loss of credits (Handel, 2008; Schudde & Goldrick-Rab, 2015). The findings from this paper, guided by past research which identifies issues with the transfer process, signify that these issues of transfer continue to be played out in the ELS:2002 data. Though there is debate about what programs and services assist to mitigate these transfer issues, many studies have shown that transfer-oriented academic advising is one service that may be an effective aid.

Academic advising at the community college exists to help students with issues from adjusting to postsecondary education through navigating the transfer process. King (1993) has called academic advising the “...only structured service on our campuses that guarantees students some kind of interaction with concerned representatives of the institutions” (King, 1993, pp. 21–22). She argued that academic advising is a sort of central hub that connects students to other resources on campus, such as career counseling, financial aid, and tutoring. Her assessment seems valid: academic advisors are sometimes the only personal connection a student will make to campus. These advisors play a critical role in student success, though on many campuses their offices are too understaffed and under-resourced to give potential transfer students the attention they need (Habley, 1993). In Dougherty’s 1992 review of literature, he noted that research generally agrees students receive inadequate pre-transfer preparatory advice from their advisors (p. 197). Studies have shown the value of quality transfer-oriented advising but enabling campuses to offer quality advising services, and have students know to

take advantage of them, is another hurdle (Freeman et al., 2006). Strengthening transfer-oriented advising services via policy and funding may be worth further exploration in a more localized study.

One reason transfer-specific advising is not a strong component of all community college systems is because the community college has other missions it must accomplish in addition to transfer. The community college experiences significant demand from businesses, politicians, and students to meet their individual needs. In other words, “...as policymakers have sought to impose vocationalism on the community college in the name of social efficiency... students have sought to use the school as a transfer point in the pursuit of upward mobility” (Labaree, 1997, p. 218). Demands that the community college provide education for the community and support the transfer function are not inherently incompatible goals, however, they do require a split focus by community colleges.

Were community colleges better funded by federal, state, and/or local governments, they may have the capacity to fund more effective remedial and transfer programs while still maintaining their other functions, like vocational programs (Dougherty, 1994). Instead, low funding per pupil, and decades of reductions in spending (Mullin, 2010), means there is often no substance behind the rhetoric of expanding baccalaureate attainment via the community college. Community colleges serve too many students and employ too few support staff: instead of acting as a conduit, community colleges appear to “help” students lower their educational goals and expectations (Dougherty, 1994). Overall, as these analyses suggest, those community college students who transfer to four-year

institutions are more likely to be those students who had the academic preparation, cultural capital, and financial standing to start with.

Throughout the fifty-odd years of democratization and diversion literature, rarely is there a question of whether it is the four-year institutions who are to blame for the ultimate diversion from bachelor's degree attainment as opposed to the community college. Much of the literature in this field is framed toward the community college, as it is in this paper, because American society has historically looked to the community college to solve the issue of stratification in four-year institutions – and continues to do so today. Conflict theory would argue that targeting the community college for its failure to transfer students is simply a way to distract from what comparatively modest efforts four-year institutions are doing to reduce stratified enrollment patterns in order to perpetuate inequalities and stratification.

The bias toward blaming the community college demonstrates a lack of accountability for four-year institutions and their tendency to accept only students who fit a mold, especially for private and selective institutions (Alon, 2009). Yet academic rigor and merit are a cornerstone of these institutions and our society, which makes it unlikely that we will see a more egalitarian approach to postsecondary education. The inherent contradiction between equity and merit, when merit is often the operationalization of the capital one possesses in a capitalist economy, raises the question of whether society should lean on education as much as it does to reduce the broader issue of stratification in society. Despite this question, the community college is still expected to chip away at the stratification in

postsecondary education largely perpetuated by four-year institutions. As transfer policies continue to be refined and transfer itself encouraged, four-year institutions need to become allies of the community college to help facilitate higher numbers of transfer (Jenkins & Fink, 2015).

The community college serves a valuable role in postsecondary institutions; vocational and community education are critical forms of learning and contribute significantly to broader society. However, based on past research and the findings in this paper, community colleges are not providing a viable alternative route to baccalaureate achievement and proves itself to be a cog in a stratified system of postsecondary education, despite its best efforts to meet society's competing expectations. Even when comparing like students, the rate of degree completion between community college and four-year enrollees is staggeringly large. For those who are able to transfer to a four-year institution, the community college does not seem to significantly hinder their degree attainment, though transfer students' time to degree completion is significantly lengthened compared to that of native students'. It is because of these results that the tenets of conflict theory appear to remain relevant and worth of consideration. Future policy efforts aimed at the community college might do well to compensate for these unintended effects of the community college transfer pathway through additional advising support, articulation agreements, and partnerships with four-year institutions. An opportunity for future research would be to look at this population of community college transfer students' future earnings and additional educational pursuits to discern any lasting effects of community college attendance not yet materialized.

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CONCLUDING REMARKS: AN UNRELIABLE PATHWAY

Despite decades of policies to lessen stratification in higher education, or the persistent unequal distribution of people and opportunities by demographic characteristics like socioeconomic status and race (Grodsky & Jackson, 2009), it remains a salient issue. Stratification is manifest in where students end up in the postsecondary pipeline: Those with access to postsecondary education face barriers within the higher education system, where admittance to certain types of institutions and majors are determined by factors such as access to information and resources (Moore et al., 2007) and, relatedly, demographic characteristics like race, socioeconomic status (SES), and parental education (Goldrick-Rab, 2006). These patterns of unequal enrollment in postsecondary education reflect stratification in the broader society and perpetuate inequalities through the labor market (Collins, 2007).

One mechanism policymakers have used to combat issues of stratification in higher education is to encourage community college students to transfer to four-year institutions so they can earn a bachelor's degree. More recently, policy proposals have sought to make access to the community college tuition-free so more students might capitalize on the opportunity to enroll in them and then transfer to four-year institutions to upgrade their degree (Camera, 2019; The White House, 2015). While extant research indicates that reliance on the transfer option has made little noticeable impact on reducing the stratified enrollment in and outcomes at four-year institutions, policymakers continue to propose the idea. However, past analyses are admittedly dated and may no longer be valid given population and

policy changes over the past thirty years. In particular, the bulk of the cited studies on this topic are from the 1970s and 1980s, yet the demographics of the United States have changed, with the Hispanic population more than doubling from 1980 to 2000 (Hobbs & Stoops, 2002) and the income gap between the richest and poorest households more than tripling from 1979 to 2007 (Sherman & Stone, 2010). These changes over the past few decades are especially relevant for community colleges, because their enrollment is particularly affected by demographic and income variations in the economy (Hillman & Orians, 2013; Kirsch et al., 2007). Furthermore, policies that aimed to strengthen K-12 college preparation like No Child Left Behind and changes to the financing of higher education and loan availability may have affected post-secondary enrollment patterns (Long, 2005).

This dissertation brings together theoretical understandings and recent data to shed light on the potential for transfer policies to reduce stratification in four-year institutions. Functionalist, credentialing, and conflict theories offer different explanations for the persistent stratification in higher education and in the broader society. These theories also posit quite different expectations regarding how policies which seek to expand access to four-year colleges and universities through the transfer mechanism might affect stratification in higher education. This study drew on these theories to identify the anticipated effects of the transfer policy on stratification in higher education and used the country's most recent longitudinal national study to gauge the degree to which theoretical expectations are supported by empirical evidence.

The conclusion reached in this study is that the community college transfer pathway is an unreliable mechanism to reduce stratification in the enrollment patterns and outcomes of postsecondary education. Specifically, the analyses found that students who attend a four-year institution have three times higher odds of obtaining a bachelor's degree than those who attend a two-year institution. Of community college enrollees intent on a bachelor's degree, 34% of that group actually transfer to the four-year institution. The students who do transfer are more likely to be female and in the lower three SES quartiles, but for many students of color and first-generation students, the transfer mechanism is not making a difference in enrollment patterns. If students make it through transfer and to the four-year institution, they have as high a likelihood of graduation as a native student, but their time to degree completion is significantly longer.

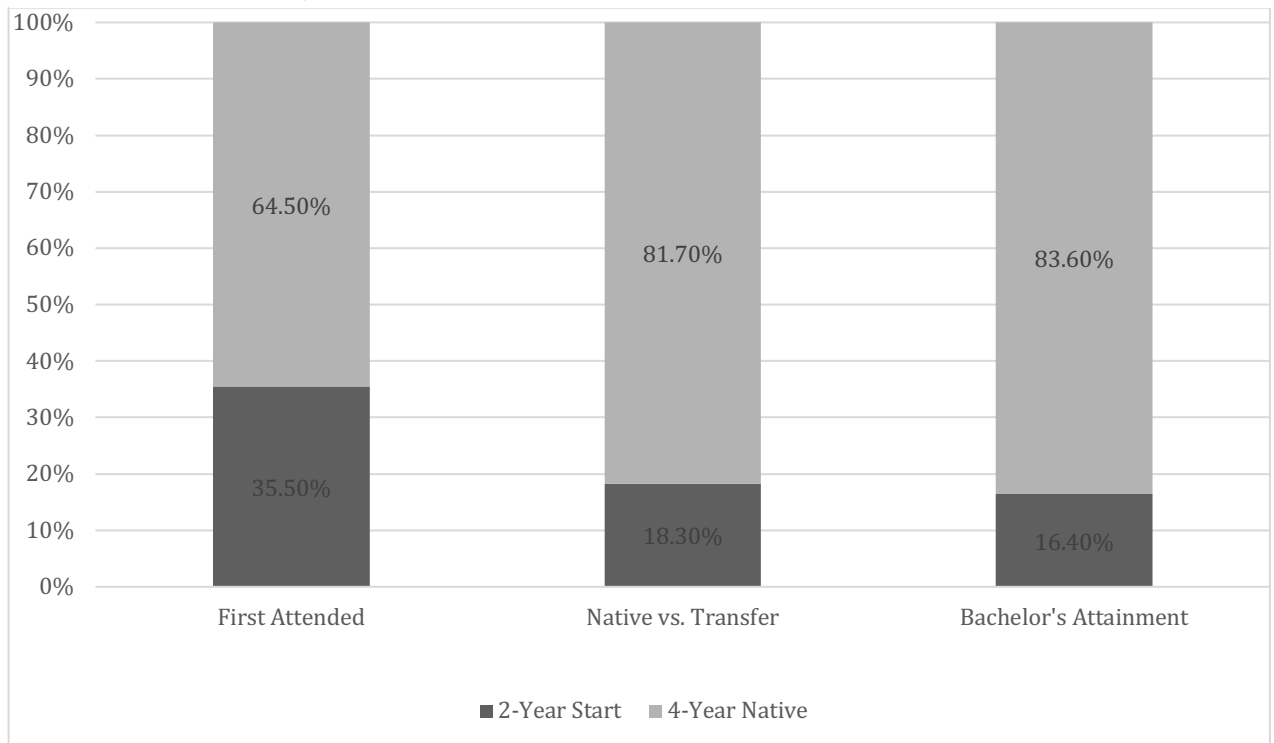
Prior research on stratification and the transfer pathway has been inconsistent in its findings because the researchers' differing approaches to data and variable selection led to divergent conclusions. Generally speaking, researchers were able to agree that community college enrollees and native four-year enrollees varied greatly in their demographic identities, with low-income, first-generation, and minority students being more likely to enroll in community colleges rather than four-year institutions (Bailey et al., 2003; Ellwood & Kane, 2000; Lee & Frank, 1990; Wassmer et al., 2004; Whitaker & Pascarella, 1994). Additionally, research consistently found that if students actually transfer to a four-year institution, they have as high a likelihood of completing a degree as a native enrollee, though they typically take longer to graduate (Adelman, 2004). While the demographic

disparities in patterns of enrollment varied in past studies, the analyses from this study revealed some patterns of enrollment associated with race and socioeconomic status (SES) that differed from the findings in earlier research.

Past research has been somewhat conflicted about who transfers to a four-year institution, but researchers generally agreed that transfer and native populations were similar in terms of socioeconomic status (Lee et al., 1993). However, the data analyzed for this dissertation show that the odds of being a transfer student are higher for students whose family socioeconomic status resides in the lowest, second, and third SES quartiles as compared to the highest SES quartile. What is also different in these updated findings is that the transfer function does not appear to have an impact on first-generation students. The lack of difference between native and transfer students in terms of first-generation enrollment patterns is interesting considering the fact that socioeconomic status is often correlated to first-generation status (Pascarella et al., 2004) and these findings indicate SES differences between the two groups are statistically significant but not for first-generation status. These new findings may indicate that parental education continues to be a significant influence on postsecondary attendance patterns (Choy, 2001). The other significant finding from this dissertation was that Black and African American students show lower odds than their White peers to be community college enrollees and transfers. This particular pattern is contrary to previous findings and indicates that the community college may be less of a pathway for Black and African American students than prior studies suggested because they may have increased their enrollment rates in four-year institutions.

This study indicates that the transfer function may be changing enrollments at four-year institutions for those in the lower socioeconomic status quartiles but the impact on stratification is modest at best. As demonstrated in Table 13 (below), data indicate that transfers make up 16.4% of graduates at a four-year institution, a percentage that is relatively stable over the past few decades despite increases in community college enrollment. Though the community college enrolls a significant portion of the college-going population, community college access alone does not appear to facilitate access to the four-year institution for the vast majority of racial and ethnic minorities, first-generation, and low-SES students. These findings suggest that despite the low barriers to entry in the community college, in both

TABLE 13: ENROLLMENT TRENDS OF WEIGHTED BY INSTITUTION FIRST ATTENDED, ENROLLMENT AT THE FOUR-YEAR INSTITUTION, AND BACHELOR'S DEGREE ATTAINMENT



Bachelor's degree aspirants' initial enrollment (left), native enrollees vs. community college transfer (center) at four-year institutions, and degree attainment by first institution attended (right).

tuition cost and admissions requirements, making access to the institution tuition-free may do little to bring down the obstacles inherent in gaining access to four-year institutions. Broader interpretations of these results vary depending on the theoretical orientation applied to these findings.

THEORETICAL PERSPECTIVES ON FINDINGS

The first paper in this dissertation outlined three prominent theories, functional, credentialing, and conflict, that provide distinct views on what the data may tell us because they approach stratification and the reasons for it from different perspectives. This section highlights the key tenets of these theories and draws on them to interpret the findings of this study.

FUNCTIONAL THEORY. This theory provides a pragmatic look at education and the labor market. Functional theory posits that societies use education to transmit values, skills, and discipline “for the survival of society” (Ballantine, 1997, p. 11). Schooling through the functional lens is highly meritocratic, where the effort by an individual and the demands of the labor market work together to determine individual placement in society. Taking a broad functionalist view, the theory posits that all social and economic developments have a reason or function behind them. However, many interpretations of functional theory lack any acknowledgement of power and resource access as factors that contribute to stratification in various sectors of society. The theory focuses instead on human agency and individual effort.

A functionalist view of the transfer pathway would suggest that the transfer function exists if the labor market or the needs of society dictate that an alternative

pathway to the bachelor's degree may be necessary to funnel more students into or through postsecondary education. For example, an alternate pathway may be important during an economic downturn because the less expensive community college pathway may provide a cheaper route to bachelor's degree attainment. Any expansion of education, in the functionalist model, provides opportunities for social mobility if it's necessary. Other interpretations of this theory posit that stratification only exists due to a lack of effort by students not because of structural inequality, here meaning the attribution of a lesser status to certain groups of people over others, where this lesser status is reinforced by social systems, norms, and opportunities (Collins, 2007). The shortcoming of this technical-functional interpretation of functionalist theory is its inability to see beyond individual action and examine the structural and contextual forces at play. For instance, this theory fails to take into account differences in access to information, resources, and opportunities.

Through a functional theory lens, the data analyzed in this dissertation should reveal no disparities in race, SES, and sex between community college enrollees and native students when controlling for GPA, intent, and other demographics because controlling for attributes like GPA and intent would account for any merit-related discrepancies between groups. However, the empirical data analyzed in this study revealed demographic variations in the composition of community college and native four-year student populations, even when controlling for these characteristics. The analyses also revealed that the demographics of the transfer population more closely matched the demographics of the four-year native

students rather than their fellow community college enrollees. Most functionalist perspectives do not easily account for these results. Since merit and GPA, core sorting features in the functionalist theory view, do not sufficiently account for the demographic variations between community college and native four-year enrollees, factors beyond those identified by the functionalist perspective may contribute to the lack of transfer of minority students to four-year institutions. Therefore, while functionalist theory may help illuminate the influence of the labor market on the higher education system, it does not provide an explanation for the demographic discrepancies in postsecondary enrollment patterns because of its reliance on merit as a core sorting mechanism of postsecondary education.

CREDENTIALING THEORY. This theory focuses on the labor market and emphasizes how employees rely on formal credentials to communicate where they should land in the labor queue (Bills, 2003). In a complementary fashion, employers use these credentials as a filtering mechanism to determine which individuals are allowed to fill particular types of job. Credentials are a significant key in job allocation and attainment in this view. This theory is not necessarily about the rationale for how stratification in postsecondary education occurs, but instead how credentials, a major product of the education system, serve as a mechanism that allows the stratification in postsecondary education to materialize in the labor market because of the tight coupling between the education system, the credentials it awards, and the position individuals can secure in the labor market (Bills, 2003).

In this view, credentials are relatively subjective tools, tenuously tied to skill, that often help maintain inequalities and labor market stratification (Collins, 1971).

In other words, credentialism posits that education does not necessarily develop the skills required in the labor market but offers those who graduate a credential that signals to an employer a socialization that is in line with the culture of an organization. In this case, an employer looks for those candidates with a “gloss” (Mayes, 1977, p. 19) that students acquire through socialization that occurs during their tenure in postsecondary education. This “gloss” (or social polish) is typically associated with selective institutions, or institutions other than those in the community college and for-profit sectors (Mayes, 1977).

Credentials from some institutions in the hierarchical system of higher education carry greater weight and, as a result, give individuals who hold credentials from those institutions an advantage in the labor market. For example, students with ivy league degrees are more likely to gain access to elite employers due to social and professional networks and the implicit communication of worth provided by the institution issuing the credential (Rivera, 2011). Scholars have argued that the use of credentials as screening mechanisms has created a “legitimized” way for those with power to discriminate against those who were not able to get access to credentials because of unequal access to education (Lamont & Lareau, 1988). Therefore, stratification in postsecondary education perpetuates a cycle of socioeconomic, racial, gender, and other forms of inequality because the stratified access to postsecondary education and credentials manifests itself in the labor market.

The devaluation of a credential is a significant issue within the discussion of credentialism and educational stratification: Should a credential become too

commonly obtained, it no longer holds the exclusive value and implicit acceptance it once did (Collins, 2011). The community college transfer function, in this view, threatens the legitimacy of the bachelor's degree because if access to the credential is expanded, it dilutes the relatively unquestioned value the degree holds. That is to say, if the number of bachelor's degree holders exceeds the market's need for them, the sheer value of having the degree will lessen and degrees beyond the bachelor's and/or the characteristics of the institution one attends become more important (Brown, 2001).

Roughly one third (34.6%) of students who intended to transfer actually engaged in transfer and the credential theory lens would posit that this transfer rate, which is similar to the transfer rates of the past few decades, is the result of various systems working to maintain the exclusivity of the bachelor's degree credential and restrict access to it by weeding people out. This weeding out of students is happening at the community college and high school levels, which indicates that some mechanism(s) in K-12 preparation and/or the four-year application or enrollment process limit minority and low-income students' opportunities to reach four-year institutions. Past research indicates that systems which limit institutional access may include standardized testing, uneven access to information, and financial obstacles, to name a few (Goldrick-Rab, 2010). These systems protect the value of the bachelor's degree credential. Furthermore, the low rate of transfer students admitted to prestigious four-year institutions, which amounts to a quarter of the enrollment rate of less prestigious institutions (Glynn, 2019), strengthens the argument that the community college may be providing the

illusion of an alternate pathway but not granting equal access to the full range of institutions or the more selective institutions that offer the bachelor's degree.

CONFLICT THEORY. Conflict theory is similar to credentialing theory in that both posit that the community college may operate as a smokescreen for educational access and attainment. However, credentialing theory focuses on the role of credentials in the labor market as the explanatory variable while conflict theory takes a broader look at social systems and power structures that lead to postsecondary stratification in the first place. A conflict theory orientation views stratification as the result of a power struggle, with those in power controlling the systems that allow for the reproduction of status (Collins, 2007). Prominent in the system of reproduction is the education system, particularly postsecondary education because of its influence in the labor market (Jaeger & Page, 1996). In this view, the main function of schools is not to impart technical knowledge but instead to teach students vocabulary, style of dress, values, and manners (Collins, 1971). The schooling environment (peers, teachers, curriculum, funding) is critical to systematic social reproduction in that it instills ways of being that become critical components of screening for employment and other societal advantages. The purpose of community colleges in this orientation is to filter out students without the preferred qualities from reaching the four-year institution.

This study demonstrates that though a diverse group of community college students reportedly intend to obtain bachelor's degrees, those persisting through the transfer process look more like the native four-year students than the community college enrollees. Given this finding, conflict theory suggests that

community colleges offer the appearance that these institutions provide a route to the bachelor's degree for students not often afforded that access. This appearance allows any failure of degree attainment to be blamed on the individual rather than the system and enables the powerful to retain their power and ways of maintaining inequality. Overall, from this perspective, the transfer mechanism creates the illusion of access to four-year institutions but does not actually increase access to them.

Aspects of this study and extant research indicate that the barriers that exist in the four-year enrollment process are not broadly mitigated by attendance at a community college. However, some findings of this study challenge the conflict theory perspective. The transfer mechanism seems to be an avenue to get some socioeconomic diversity into the four-year institution and students who do transfer have an equal likelihood of graduation as native students, though admittedly a longer time to completion. These results demonstrate that the transfer mechanism may not be wholly about creating the illusion of access since it provides limited opportunity for low-income students to find a path to the baccalaureate degree.

A conflict theory perspective would posit that in order to help racial and ethnic minorities and low-income students navigate access to four-year institutions, policymakers and researchers must think beyond the financial barriers to education and examine the mechanisms that create stratification in higher education in the first place: the long history of unequal preparation for postsecondary education in the K-12 system (Carnevale & Strohl, 2014), the disproportionate access to information about postsecondary education (Pascarella & Terenzini, 2001), and the

obstacles inherent to postsecondary access mentioned previously (Goldrick-Rab, 2010), among others. The roots of the complex problem of unequal and stratified access to postsecondary education are not addressed by the comparatively simple transfer mechanism or the tuition-free community college proposals because these proposals lack any abatement of the structures which limit educational access beyond financial means.

LIMITATIONS & FUTURE RESEARCH

Like any study, this research has limitations. These limitations foreshadow future research opportunities that may provide additional insight into the issue of stratification in postsecondary education and the effects of the community college transfer pathway.

Several variables beyond those incorporated in this study may be valuable controls to help us understand the transfer pathway. As mentioned in Article Two, distance to an institution of higher education is a variable that some researchers have used as an indicator of postsecondary enrollment (Rouse, 2005). They theorize that distance to a postsecondary institution from a student's primary home might increase the likelihood of transfer to or enrollment in a particular type of postsecondary education because of the ease of access to the institution or institutions. These national differences in access to higher education may be worth considering in future research due to historical and current issues of segregation and unequal educational access.

In addition to proximity to institutions of higher education, a more fulsome understanding of student aspirations may give more insight into student intent than

a general question about the highest degree students plan to achieve, as was done in ELS:2002. Those who did not aspire to a bachelor's degree (or higher) during the spring semester of their senior year of high school were not included in this study. Since student aspirations may change over time, it is likely that some students who persisted to the bachelor's degree were left out of these analyses. The development of improved controls for student intent and changes to intent may offer a more complete picture of the population of interest.

Future research on the topic of transfer could expand extant research on state-wide partnerships between community colleges and four-year institutions which seek to facilitate transfer to four-year institutions and simultaneously enable community colleges to provide successful vocational and community education programs. For example, some states have enacted policies that encourage colleges to develop articulation agreements that clarify how community college credits can fulfill some of the requirements for a four-year degree and increase transfers to four-year institutions (Anderson et al., 2006; Handel, 2008). Demystifying aspects of the transfer process, as articulation agreements may do, has shown to be effective in helping students successfully reach the four-year institution.

Furthermore, some colleges and universities have developed programs that focus on recruiting racial and ethnic minorities and low-income students directly to four-year institutions, which may account for the changes in Black and African American enrollment patterns. Research and information, new and existing, on these programs could be helpful in national policy development since some extant research indicates these efforts can improve transfer from two-year to four-year

institutions and reduce stratification (Baker, 2016). It would also be important in future research to understand if community college transfer has any long-term impact on future wages and additional degree attainment. While this study demonstrates some effectiveness of the transfer pathway, the transfer pathway may impact future earnings beyond an extended time to degree completion. Future studies could track these long-term impacts.

The theories used to guide this study also have limitations. They are macro theories that address stratification, but they do not explicitly address the transfer function of the community college or other interventions that might reduce stratification in higher education. Thus, efforts to develop more focused theories regarding how the transfer mechanism and other initiatives might reduce stratification in higher education are needed to guide future research on this salient issue.

POLICY IMPLICATIONS AND DISCUSSION

If policymakers were to look at past policy developments as part of social reproduction in our capitalist economy, "...the history of school reforms in the United States appears less a story of an enlightened but sadly unsuccessful corrective and more as an integral part of the process of capitalist growth itself" (Bowles & Gintis, 2007). That is to say, some theorists, like Bowles and Gintis, argue that past policy developments have fed into the process of social reproduction and allowed the larger inequalities to persist. Sociological theories about stratification are important to explain why these patterns in attendance, attainment, and returns to education exist.

Both the empirical findings and theories of stratification suggest that stand-alone policies that purport to increase access to the transfer mechanism are unlikely to be the key to equalizing access to four-year institutions and the bachelor's degree; they are at best an incomplete solution to stratification in higher education. Policies must approach reducing stratification with strategies that enhance access to various types of four-year institutions, including those which are selective, and to all majors, degree programs, and educational tracks. Developing policies that recognize the dynamics of stratification and how it endures may be necessary to alleviate stratification in postsecondary education and reduce inequality in the broader society.

Researchers like Hirsch (2005) have suggested that reducing the tie between the labor market (income) and education would lessen the pressure and competition in educational attainment and foster less stratification in the educational system. However, if we are to view the educational system via a conflict theory lens, it is unlikely that our dependence on education as a job placement tool will reduce stratification in any real way due to the structure of our society and our consistent inability to level the playing field. Instead, if the problem of stratification in postsecondary education was seen as an institutional or systemic issue rather than an individual failure or a need to take a "different path" to the baccalaureate, perhaps additional resources would be granted to K-12 prep or college pipeline programs.

A great deal of research identifies the vast number of barriers to college entry and completion (Schudde & Goldrick-Rab, 2015). With this knowledge

policymakers could develop comprehensive policies that address these barriers as well as targeted policy approaches that strengthen articulation agreements (Anderson et al., 2006; Handel, 2008) and increase funds for college access support programs such as TRIO (Mery & Schiorring, 2011). These supports have demonstrated some localized success in granting access to four-year institutions for those less likely to attend them via the traditional route (Anderson et al., 2006; Handel, 2008; Ignash & Townsend, 2000; Long, 2005; Mery & Schiorring, 2011).

Throughout this dissertation I have discussed the patterns of stratification in postsecondary institutions and theories of stratification that might explain the persistence of this problem. I have also provided an updated analysis of community college student pathways to transfer and four-year outcomes in order to help policymakers consider their reliance on the transfer mechanism and the potential consequences of tuition-free community college policies. These policies, as mentioned throughout this paper, increase access to valuable trades and certification programs that serve the economy and help students gain skills. However, insofar as a goal of the transfer mechanism is to equalize access to the four-year institution and its associated outcomes, the transfer mechanism alone is not going to achieve this goal: The overall low rate of transfer and lack of racial/ethnic and first-generational diversity in the transfer population found in this analysis means that community colleges are operating primarily as a smoke screen for equal opportunity instead of an actual tool for generating equality. The reality of stratification in postsecondary education and the findings within this dissertation demonstrate the challenge policymakers have when it comes to generating policy

that will reduce stratification. Reducing cost will not alone suffice: For substantive change, policies will at the very least need to include supports for students to navigate the complex and unequal world of postsecondary education.

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